Operating Guide

DA-3x Internetwork Analyzer

Wandel & Goltermann

Electronic Measurement Technology

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DA-3x for Windows

Operating Guide

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Release 1.2 June 1996

Wandel & Goltermann
Electronic Measurement Technology

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Notice
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Preface

About This Book

This book contains background information, procedures, and examples for using the basic and advanced features of the DA-3x for Windows software.

This book assumes that you are familiar with the basic terminology and procedures for using Microsoft®Windows™ for Workgroups Version 3.11 or later. It also assumes that you have a basic understanding of personal computers, computer networks, and network protocols.

How This Book is Organized

This book is organized to follow the order of the DA-3x's major tasks and the structure of the DA-3x for Windows software. A brief description of each chapter is provided below.

Chapter 1, Overview	Provides general information regarding the DA-3x hardware and software requirements, and physical setup.
Chapter 2, DA-3x for Windows Basics	Describes how to use the Windows interface menus and results windows.
Chapter 3, Launch Pad	Provides guidance for using the DA-3x for Windows software to begin tasks.
Chapter 4, Capture	Explains how to capture and playback network traffic.
Chapter 5, Monitor	Explains how to monitor traffic and display statistics and graphs in real time.
Chapter 6, Examine	Provides information on examining captured traffic and displaying, searching for, filtering, and printing frames.
Chapter 7, Application Manager	Explains how to manage, run, create, copy, combine, rename, and delete applications.
Chapter 8, Create Application	Describes how to create new applications and customize existing applications for your individual operation.
Appendix A, Toolbar Reference	Provides a quick reference for the toolbar icons and describes the functions of the individual buttons.
Appendix B, Keyboard and Mouse	Describes how to accomplish tasks using the keyboard or mouse.

Appendix C, Automating DA-3x for Windows Tasks	Describes how to use the Microsoft Windows Recorder to automate any DA-3x for Windows procedures.

Related Documentation

In addition to this manual, the following printed and on-line materials are included in the DA-3x for Windows package.

DA-3x for Windows Getting Started	Briefly describes the features of the DA-3x for Win dows software, explains how to set up the software on your DA-3x, how to start and quit the software, and liststhe differences between the character-based DA-3x software and the DA-3x software for Windows.
On-Line Help	Provides detailed information about DA-3x for Windows features and instructions on performing specific tasks. The on-line help also provides network interface and protocol specific reference information.
On-Line Documents	Provides additional technical information about the DA-3x for Windows software in DOS text files. The on-line documents include:
	readme.txt contains information available only after the books in the package were published

The *DA-30/31 Applications Information* binder which is included in the DA-30/31 Standard Documentation Set describes the character-based applications provided with the DA-3x character-based software. These applications will also run with the DA-3x for Windows software.

The following documentation sets are available for the DA-3x and can be purchased separately:

DA-3x Programming Documentation Set	Provides information on creating and editing Net work Event Programs.
DA-3x Protocol Reference Set	Provides operating information for all of the avail able protocol software packages. (Protocol refer ence information is included in the on-line help for the DA-3x for Windows software.)

Document Conventions

The DA-3x for Windows documentation uses some special keyboard reference and text conventions as well as symbols to indicate tips, notes, cautions, and warnings.

Keyboard Conventions

Convention	Description
Keys	All key names are shown as they appear on the DA-3x keyboard, for example, Ctrl, Esc, PgUp, and PgDn.
Key Combinations and Sequences	Keystroke combinations and sequences are used to invoke commands or perform operations. Key combinations are shown as Key+Key, for example, Shift+F1, which means to hold down the Shift key while pressing F1. Key sequences are shown as a comma-separated series, for example, Alt, F, A, which means to press and release each of these keys in order: first Alt, then F, then A.
Arrow Keys	The term "arrow keys" is the collective name for the Up Arrow, Down Arrow, Left Arrow, and Right Arrow keys.

Text Conventions

Convention	Description
Text That You Type	Specific text that you are to type is shown in boldface. For example, if the book says to type **win** then you type the lowercase letters "win." What you type is always shown in lowercase letters, however, you are not required to use lowercase letters.
Filenames and Directories	Filenames and directories are shown in italic. For example, *autoexec.bat*.
Nodenames and Programming Examples	Nodenames and programming examples are shown in Courier, a monospaced font, to more closely resemble their on-screen appearance.

Special Information

Tip:

A tip conveys information on shortcuts or convenient procedures which are not required but make tasks easier.

Note:

A note conveys information, which, if overlooked will seriously inconvenience the user. However, no permanent or unrecoverable errors should occur.

Caution:

A caution is information about possible damage to the instrument. The nature of the damage and steps to avoid the problem are described.

Warning:

A warning is information about possible injury to the user of the instrument, such as from electrocution. Steps to avoid injury are part of the warning text.

Application Availability:

The faces that appear beside the names of applications in a list have the following meanings:

- The smiling face indicates that the application is available to run.

- The frowning face indicates that the application is not available to run.

Customer Support Contacts

You can contact U.S. Customer Support for WG by telephone, fax, or electronic mail using the following numbers.

Caller	Voice Number	Fax Number	Internet Address
International Customers	919-460-3300	919-481-4372	tac@wg.com
Continental US Customers	800-346-6332	919-481-4372	tac@wg.com
Continental US Sales Force	800-729-9441	919-481-4372	tac@wg.com

Note:

The numbers listed above are for use within the U.S. Prefixes may vary depending on the country of origin.

DA-31 and DA-30C Exceptions

The DA-30® family of instruments includes the DA-30, DA-31, and DA-30C. The DA-30 and the DA-31 operate identically in most respects and most of the information in this manual applies to both instruments. Exceptions are those sections that refer to dual analyzers and dual analysis, which are not available on the DA-31.

Likewise, the DA-30 and the DA-30C operate identically in most respects and most of the information in this manual also applies to the DA-30C. Two major differences between the DA-30 and the DA-30C are:

- DA-30C has a built-in color monitor—DA-30 has a built-in monochrome monitor
- DA-30C has a built-in trackball—DA-30 does not.

Note:

Unless otherwise specified, the term DA-3x refers to the DA-30, DA-31, and DA-30C.

1. Overview

1.1. General Information

The DA-3x Protocol Analyzer is a test tool with the power and flexibility to provide complete testing capabilities for local area networks (LANs), wide area networks (WANs), and enterprise-wide networks comprised of both LANs and WANs.

The DA-3x for Windows provides a Microsoft®Windows™ -based user interface that simplifies tasks with pull down menus and user-assignable buttons. The DA-3x for Windows software is compatible with Microsoft Windows applications and utilities. The Windows interface includes extensive on-line help for using the core software, running applications, configuring network interfaces, and decoding protocols.

You can configure the DA-3x as a single analyzer for single network tests or as a dual analyzer for simultaneous operation on networks with different topologies. You can monitor network traffic while capturing it in memory, and write it to disk for further analysis. You can also use the DA-3x to generate traffic while testing other network nodes or components.

A collection of predefined applications designed for particular network interfaces and standard protocols is included with your DA-3x. The results of these applications are displayed in easy-to-read tables, windows, and statistical graphs. You can modify the applications and the result displays to suit your specific analysis needs.

1.1.1. DA-3x Conceptual Views

The DA-3x's architecture divides your network analysis problem into three sections (Figure 1-1): network interfacing, protocol analysis, and the user interface. Each of these has its own processor working on its task in parallel with the others. This gives you the power to do simultaneous dual analysis with no performance degradation.

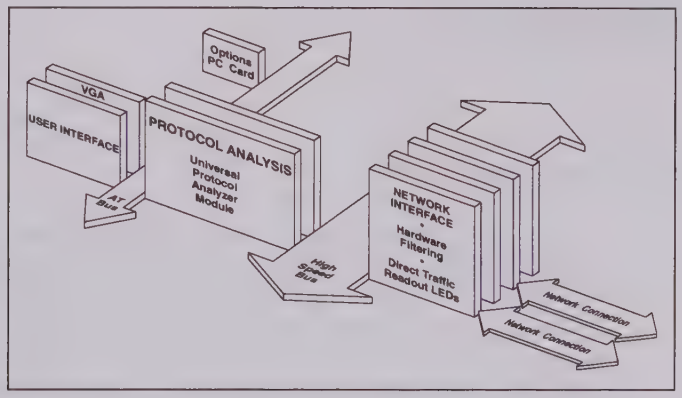


Figure 1-1 DA-3x Three Parallel Processors

1.1.2. Network Interface

Each active network interface employs an INMOS transputer to gather basic network statistics, capture data and, when appropriate, play it back. Some interfaces also include other types of processors. The interface coordinates the setup and implementation of 256 hardware address filters, timestamping, and communication with other processors. Extensive hardware filtering optimizes performance by limiting the amount of data moving across any bus. As many as four different interfaces can be installed in the DA-3x Mainframe. The interface is the printed circuit board included in an interface accessory, such as Ethernet, Token Ring or V.24. LED displays, which provide a visual assessment of network frame rate and error conditions or lead status (for WAN interfaces), are driven directly by the interface.

For WAN analysis, a Feature Module must be paired with each WAN interface, such as X.21 or V.35, because the Feature Module contains the transputer that captures or generates network traffic. All network interfaces are compatible with the module, so only one Feature Module is needed. Two WAN Feature Modules are available: the 256 Kbps Standard and the 2 Mbps High Speed. Both modules support the T1, X.21, V.24, V.35, and V.36 interfaces. The interface card handles physical layer tasks and is hardware dependent. The WAN Feature Module controls the interface card. It monitors the status of the line through the line interface, packetizes information and sends it to the analyzer modules for further processing.

1.1.3. Protocol Analysis

The protocol analysis processor, also a transputer, analyzes high frame rate data streams at network speeds. It executes multiple parallel processes, one for each layer of the Open Systems Interconnection (OSI) protocol stack (Table 1-1) and one for central control and interaction with the other processors. This enables the DA-3x to decode a seven layer protocol stack in real time.

	OSI Protocol Stack	Functions	Common Unit
Software Dependent	7 Application	Sample: Transfers a file Protocols for user applications: • file transfer • electronic mail	File
	6 Presentation	Sample: Handles format differences Protocols for data representation: • data compression • file encryption • screen formats	
	5 Session	Sample: Oversees the session Protocols for managing sessions between users: • initiates communication session • terminates communication session	
	4 Transport	Sample: Makes sure all data gets there Protocols providing end-to-end delivery of data: • breaks up messages into packets • manages transmission, sequencing and reassembly of packets	Message

Table 1-1: Open Systems Interconnection (OSI)

	OSI Protocol Stack	Functions	Common Unit
Hardware Dependent	3 Network	Sample: Chooses the best path Protocols for routing and switching data flow between source and destination hosts.	Packet
	2 Data Link	Sample: Delivers frames to the next node Protocols for the formatting of data for transmission to the next node: • assembles frames • manages addressing • controls bit level errors - CRC	Frame
	1 Physical	Sample: Puts bits on the cable Protocols for physical and electrical characteristics of the network: • handles cable specifications, • connector types, pinouts, • voltage levels • sets up transmission rates and data encoding	Bit

Table 1-1: Open Systems Interconnection (OSI) (cont.)

The Protocol Analyzer Module's Capture Buffer can temporarily store high speed network traffic and then feed it to the hard disk at a pace the mainframe's bus can accept without losing frames.

The Mainframe architecture supports either one or two analyzers. With two Protocol Analyzer Modules, the DA-3x can simultaneously generate and monitor traffic on two different network interfaces. This lets the DA-3x examine complex internetworking problems.

1.1.4. User Interface

The DA-3x's third processor is an Intel 486SX. It manages the user interface during setup and definition procedures. The user interface is based on the architecture of a 486 IBM-compatible PC and incorporates all standard PC interfaces, including video display, keyboard, parallel printer, two serial communication ports, a hard disk, and a 1.44 MByte floppy disk drive. This processor's only real time function is updating the display and providing high speed data storage and exchange.

The DA-3x uses special high-speed links for communication between the line interface modules and the analyzer modules. An AT bus is the communications link between the user interface module and the two analyzer modules. The high internal bandwidth of the DA-3x allows it to keep pace with network traffic while monitoring and generating high traffic rates for emulation and testing.

1.2. Overview of the DA-3x for Windows Launch Pad

The Launch Pad screen provides access to all of the features of the DA-3x. During installation, the Setup program automatically creates the DA-3x for Windows program group and the Launch Pad icon and adds the icon to the Startup group. When you start up the DA-3x, it automatically runs Windows and the Launch Pad.

Figure 1-2 illustrates the areas of the Launch Pad screen.

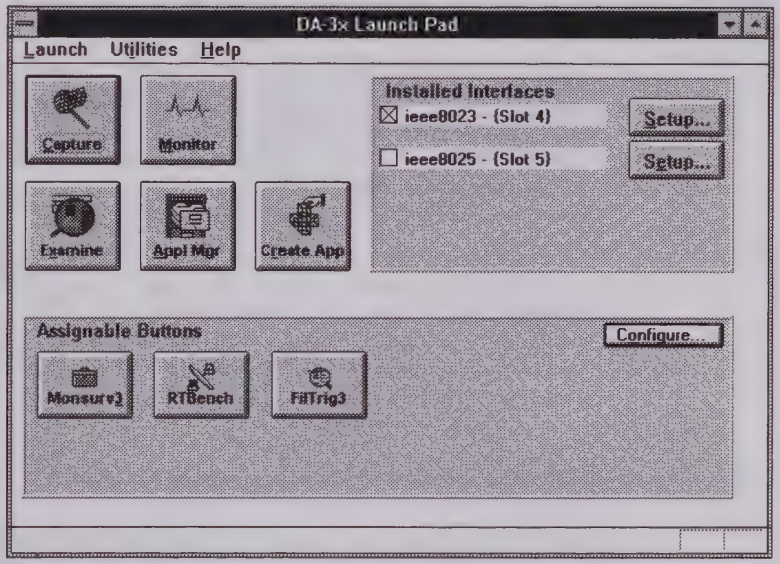


Figure 1-2 Launch Pad Screen

The main areas of the Launch Pad screen and their functions are:

Five task buttons Provides a selection of five main DA-3x for Windows functions:

Capture. Starts the process of capturing network traffic.

Monitor. Provides a comprehensive view of the activity on your network.

Examine. Provides options for real time and post-capture processing of network traffic.

Application Manager. Allows you to select and manage existing applications or to define new applications.

Create Application. Allows you to create new applications or modify existing applications.

Installed Interfaces Allows you to select from a list of currently installed network interfaces.

Assignable buttons Allows you to assign applications to buttons for quick application starts.

1.3. Screen Regions

Once you have chosen a task from the Launch Pad, the DA-3x presents the first screen pertaining to that task. Most screens have similar actions grouped together in certain regions of the screen.

Figure 1-3 illustrates the regions of the DA-3x for Windows screen which are described below.

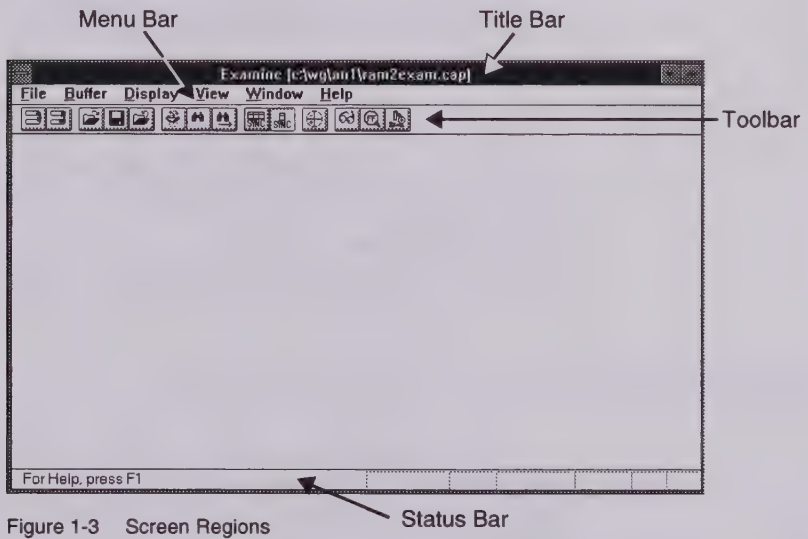


Figure 1-3 Screen Regions

1.3.1. Title Bar

The title bar is located along the top of a screen or window and contains the name of the screen or window.

A title bar may also contain the following elements:

- Control-menu button
- Maximize button
- Minimize button
- Restore button

If more than one screen or window is open, the title bar for the active screen or window is a different color or intensity than the other title bars.

1.3.2. Menus

The menu bar is located below the title bar, along the top of the screen and lists the available menus for the current screen.

To view all the commands in a menu, do one of the following:

- Press Alt+n, where n is the underlined letter in the menu name. For example, press Alt+F to open the File menu.
- Click on the menu name using the mouse.

1.3.3. Toolbar

The toolbar is displayed across the top of the screen, below the menu bar, to give quick mouse access to a screen's most commonly used functions.

To hide or display the toolbar:

- Choose Options View Toolbar from the Control menu.
  This toggles the display on and off.

1.3.4. Status Bar

The status bar, displayed at the bottom of the screen provides information about the current screen or window, such as a description of the current menu option. When you move the cursor to a command, the status bar describes the command.

1.3.5. Dialog Boxes

A dialog box is a temporary window that is displayed to request information for carrying out a selected command. While a dialog box is displayed, only the dialog box can receive input. To perform any other task you must exit from the dialog box.

Figure 1-4 illustrates a typical dialog box.

Figure 1-4 Sample Dialog Box

You can use a dialog box to specify the information that the DA-3x needs to carry out a command. Table 1-2 provides dialog box tasks and various methods to accomplish them.

Dialog Box Task	Action
To set options	Do one of the following: • Point to the option and click the left mouse button. • Hold down the Alt key and press the underlined letter in the option name. For example, to hide or display the toolbar, press Alt+V+B.
To carry out the options	Do one of the following: • Choose the OK button. • Press Enter, if the OK button is highlighted.
To cancel changes to options settings	Do one of the following: • Choose the Cancel button. • Press Esc.

Table 1-2: Dialog Box Tasks

Note:

You can sometimes carry out an action without leaving the dialog box. In these cases, the Cancel/OK buttons change to Close. When you choose the Close button, the DA-3x does not reverse actions it has already carried out; it simply closes the dialog box.

Tip:

You can move dialog boxes, screens, and windows by dragging their title bars.

1.3.6. Command Buttons

A command button allows you to initiate an immediate action, such as carrying out a command or canceling a command. OK, Cancel, and Help are common command buttons, often located along the bottom or on the right side of the dialog box. Figure 1-5 illustrates command buttons.

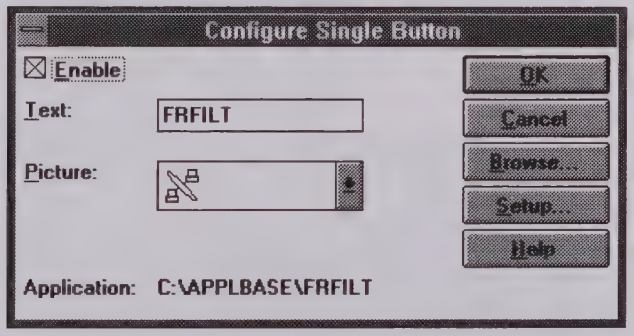


Figure 1-5 Sample Command Buttons

A command button followed by:

an ellipsis (...) Opens another dialog box, such as the Setup... button on the Configure Single Button Setup.

a greater-than sign (>) Expands the active dialog box to display more options, such as the Merge>> button on the Application Manager screen.

Unavailable buttons are dimmed. The currently selected button has a darker border than other buttons. You can choose the selected button simply by pressing Enter.

To close a dialog box without completing a command:

- Choose the Cancel button.

1.4. Dual Analysis

The DA-3x can run dual-analyzer applications, provided that there are two analyzer modules installed. You can use Analyzer 1 only, Analyzer 2 only, or both analyzers (Dual).

To run a dual analyzer application, the following hardware and software must be installed on the DA-3x:

- Two Protocol Analyzer Modules in slots 2 and 3
- Two Line Interface Modules in slots 4 or 5 and 6 or 7
- Network Interface Software for each network interface

If your application is configured to use two analyzer modules, you can combine two different applications (one for each analyzer) and run both of them at the same time. You can also save the combined application as a new application, if you want to use the same combination again. Dual mode allows you to capture data to two separate files and examine them separately or together on the same screen.

This capability of the DA-3x can be used in many ways, including:

- off-line testing of interconnect devices such as bridges and routers
- on-line testing of the functionality of interconnect devices
- monitoring two networks simultaneously

This allows you to analyze networks with different topologies at the same time (Ethernet/Token Ring; LAN/WAN). Or, it can generate frames from one interface and monitor them through another. The DA-3x can also flood traffic through a network device and monitor the traffic as it is forwarded. This capability is especially useful for troubleshooting, benchmarking, and performing acceptance testing on bridges, gateways, and routers (Figure 1-6).

You can monitor two networks simultaneously to obtain historical utilization information. For instance, you could load a dual MonSurv application to monitor Ethernet and Token Ring networks simultaneously. You could obtain utilization and error trends over a week and use them as a baseline for future comparison.

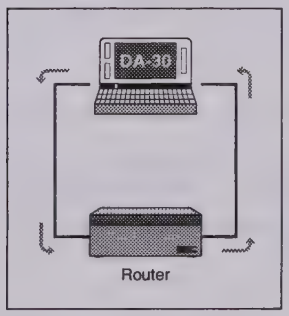


Figure 1-6 Testing with Routers

1.5. How to Use On-Line Help

On-line help provides you with quick information on a command you want to use, a task you want to perform, or a feature you want to know more about. The Help menu is usually the last menu on the menu bar.

To use on-line help:

- Access the Help menu (Figure 1-7) from the current screen.

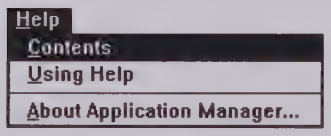


Figure 1-7 Sample Help Menu

Table 1-3 illustrates the available commands:

Help Command	Action
Contents	Displays the Help Directory screen which provides a set of pointers to help you navigate through the DA-3x on-line help system.
Using Help	Displays information on accessing on-line help for Windows such as using bookmarks or keeping the Help screen on top of other windows.
About	Displays the software version information and the copyright notice for the DA-3x for Windows software.

Table 1-3: Help Commands

To display help and the DA-3x for Windows software at the same time:

When you first open Help, the Help window appears on top of other windows. If you select another window, it might cover up the Help window. You can choose to keep the Help window on top of other windows even when you switch to other applications. This can be useful if you are using Help to follow a step-by-step procedure in your application.

- From the Help menu in the Help window, choose Always On Top.

  A check mark appears next to the command, and a shadow appears around the window border to indicate that the Help window is on top.

  If you do not want the Help window to be on top, choose Always On Top again to toggle the option off.

To use the Help Toolbar:

While viewing on-line help for any component of the DA-3x on-line help system (such as the Core or network interface help), you can access the help for another component by choosing the appropriate button from the Help Toolbar.

For additional information on using and printing Help see the *Getting Started* manual.

2. DA-3x for Windows Basics

This chapter contains basic information on selecting tasks and menus, displaying results, and moving between windows using either a keyboard or a mouse. It provides information on the following topics:

- selecting a task
- selecting and closing a menu
- choosing a menu command
- using the control menu
- displaying results windows
- switching between windows applications

2.1. Selecting a Launch Pad Task

The five task buttons on the Launch Pad screen allow you to access the main functions of DA-3x for Windows at the selection of a button. Table 2-1 illustrates the five task buttons and describes the tasks performed with each one.

Button	Action
	Captures and stores network traffic in the capture buffer. For information on Capture, refer to Chapter 4 of this guide.
	Monitors network events and displays the results in graphs and charts. For information on Monitor, refer to Chapter 5 of this guide.
	Examines captured frames, displays frame information, searches for specific frames and filters captured frames. For information on Examine, refer to Chapter 6 of this guide.
	Manages applications and performs tasks like loading, running, compiling, saving, combining, and deleting applications. For information on Application Manager, refer to Chapter 7 of this guide.
	Creates new applications or modifies existing applications and specifies setup information such as analyzer configuration, network interface, disk capturing, and protocols on the protocol stack. For information on Create Application, refer to Chapter 8 of this guide.

Table 2-1 Launch Pad Task Buttons

2.2. Selecting and Closing a Menu

Selecting a menu name displays its related commands so that you may use them to complete tasks. Figure 2-1 illustrates the DA-3x for Windows menus and menu commands with the File menu selected.

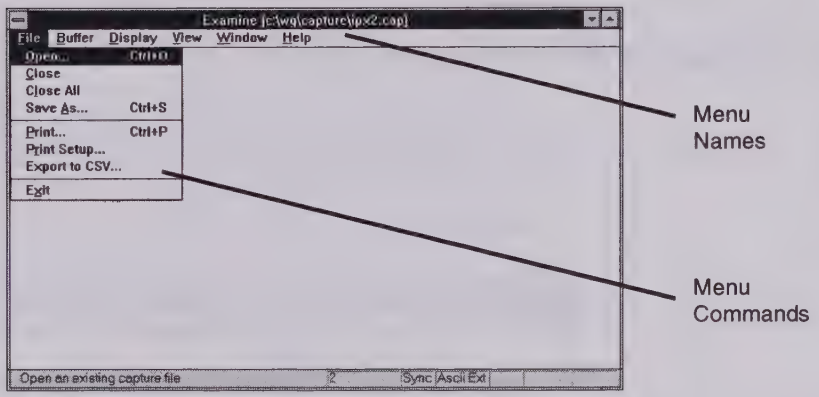


Figure 2-1 Menus and Menu Commands

You can select a menu with the mouse or by using the keyboard as described in Table 2-2.

Task	Mouse Action	Keyboard Action
To select a menu	Highlight a menu name	Press Alt or F10 to highlight the menu bar and use the arrow keys to move to the desired menu.
To open a menu	Click the left mouse button	Press Enter or Alt and the under-scored letter in the menu name.
To close a menu	Click on the menu name or anywhere outside the menu	Press Alt or F10, or press Esc twice.

Table 2-2 Selecting and Closing a Menu

2.3. Choosing a Menu Command

You can choose menu commands by pressing key combinations or by using the mouse.

To select a menu command using the keyboard:

1. Press Alt or F10 to access the menu bar.

2. Press the underlined letter in the menu name.

To select a menu command using the mouse:

1. Click on the menu name.
2. Click on the command name.

2.4. Using the Windows Control Menu

The Windows Control-menu allows you to move, resize, or close a window. The Control-menu box is in the upper left-hand corner of each screen or window as shown in Figure 2-2.

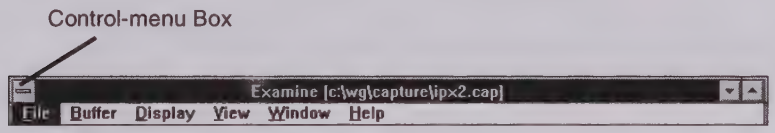


Figure 2-2 Windows Control-menu Box

The Windows Control menu is particularly useful if you use the keyboard to work with the DA-3x as it provides access to commonly used window tasks.

To access the Control-menu:

- Press Alt+Spacebar or use the mouse to click on the Windows Control-menu box.

The Windows Control menu appears, as shown in Figure 2-3.

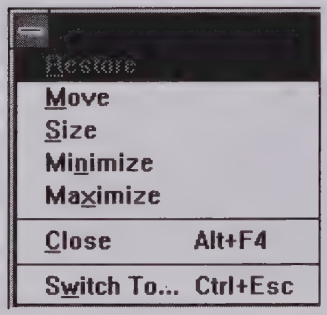


Figure 2-3 Windows Control-Menu Commands

The functions of the Control-menu commands are described in Table 2-3.

Command	Function
Restore	Returns the window to its previous size.
Move	Moves the window by using the arrow keys.
Size	Enlarges or reduces the window by using the arrow keys.
Minimize	Reduces the window to an icon.
Maximize	Enlarges the active application window so that it fills the entire desktop.
Close	Closes the application window.
Switch To...	Switches to a selected window.

Table 2-3 Windows Control-Menu Command Functions

2.5. Displaying a Results Window

Results windows allow you to display information about the captured frames that are stored in the capture buffer. The results windows are described in Table 2-4.

Results Window	Description
Frame Summary	Displays summary information about each frame in the current capture buffer.
Hexadecimal Trace	Displays the contents of each frame in hexadecimal format and character code format.
Protocol Detail	Displays all decoded protocol elements for each frame in the current capture buffer.
Protocol Summary	Displays protocol-specific information for each frame in the capture buffer.
Network interface specific results windows	Display network status information which varies depending on the network interface.
Layer display, state trace, and prompt trace windows	Display information collected from an application based on network activity recognized at the specified layer in the NEP.

Table 2-4 Results Windows

Additional results windows which display statistics and graphs are available while monitoring network traffic.

Figure 2-4 illustrates the Display menu commands available on the Examine screen. Similar commands are also available on the Interface menu of the Capture, Real Time, and Monitor screens.

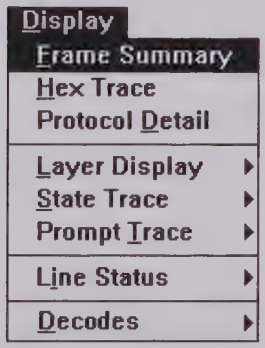


Figure 2-4 Display Menu Commands

To display a results window:

- Choose the results window from the Examine or the Real Time Interface menu.

Figure 2-5 provides a sample results window.

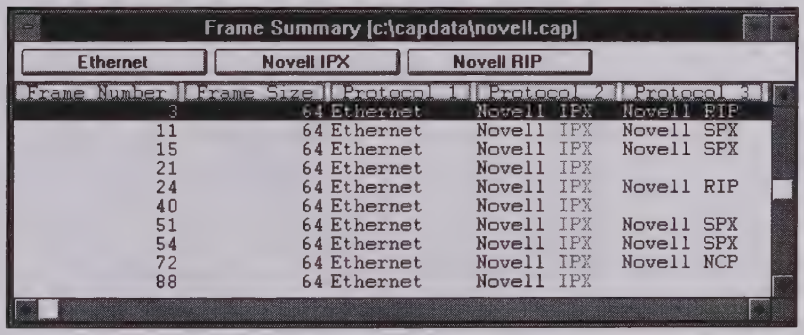

Frame Summary [c:\capdata\novell.cap]
Ethernet
Novell IPX
Novell RIP
Frame Number | Frame Size | Protocol 1 | Protocol 2 | Protocol 3
3 64 Ethernet Novell IPX Novell RIP
11 64 Ethernet Novell IPX Novell SPX
15 64 Ethernet Novell IPX Novell SPX
21 64 Ethernet Novell IPX
24 64 Ethernet Novell IPX Novell RIP
40 64 Ethernet Novell IPX
51 64 Ethernet Novell IPX Novell SPX
54 64 Ethernet Novell IPX Novell SPX
72 64 Ethernet Novell IPX Novell NCP
88 64 Ethernet Novell IPX

Figure 2-5 Sample Frame Summary Window

2.6. Moving Between Results Windows

You can have an unlimited number of results windows displayed on the screen at the same time. However, you can only interact with one window at a time to move it, resize it, or close it. The title bar of the currently active window is highlighted.

The DA-3x displays a listing of the currently open results windows at the bottom of the Window menu (Figure 2-6) in the order in which they were opened. A check mark appears in front of the name of the active window. When you choose an open window, you make that results window active.

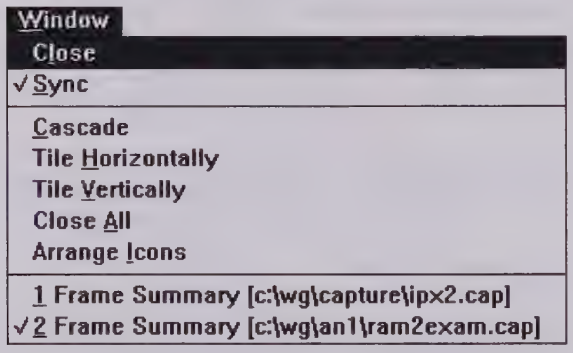


Figure 2-6 Window Menu

To move to any open window:

- From the Window menu, choose the results window that you want to make active.

To move to the next open window:

- From the Windows Control menu, choose Next to move to the next window for the current capture buffer.

Shortcuts:

- Press Ctrl+Tab until the desired window appears.
- Use the mouse to click on a visible portion of the desired window.

2.7. Synchronizing the Results Windows

You can synchronize the display of results windows. This allows you to scroll through the buffer and display the same frame in multiple windows at the same time.

To synchronize two or more results windows:

- From the Window menu choose Sync and repeat for each window that you want synchronized.

To synchronize all of the currently displayed windows:

- From the Buffer menu choose Sync All.

To unsynchronize the currently displayed windows:

- From the Buffer menu choose Sync or Sync All.

Shortcut:

Use the Sync or Sync All button on the toolbar.

2.8. Resizing a Results Window

You can enlarge a window to display more information or reduce the size of the window to allow more room for another window.

To resize the current results window:

- From the window's Control menu, choose Size and use the arrow keys to select and move the border.

Shortcut:

Use the mouse pointer to drag on the border or corner of the window that you want to resize.

Note:

You cannot move or size a window that has been enlarged to its maximum size. Use the Restore command on the window's Control menu to restore it to its original size and then move or resize it.

You can enlarge the current results window to fill the entire screen below the menu bar area. This allows you to view more information about more frames on the screen.

When you finish viewing a window, you can reduce it to an icon if you want the window to be available for later use. You can select and move icons on the screen the same way that you select and move windows.

To maximize the current window:

♦ Choose Maximize from the window's Control menu.

To minimize the current window:

♦ Choose Minimize from the window's Control menu.

To arrange window icons into rows:

♦ Choose the Arrange Icons command on the Window menu.

Shortcuts:

- Choose the Maximize button in the upper-right corner of the window to maximize the window.
- Choose the Minimize button in the upper-right corner of the window to minimize the window.

Tip:

If the window that you want to maximize is currently an icon, you can choose Maximize from the Control menu.

2.9. Arranging the Results Windows

You can resize and arrange all currently displayed results windows by using the following commands on the Window menu:

- Tile Horizontally
- Tile Vertically
- Cascade

Figure 2-7 illustrates the window arrangements of these commands.

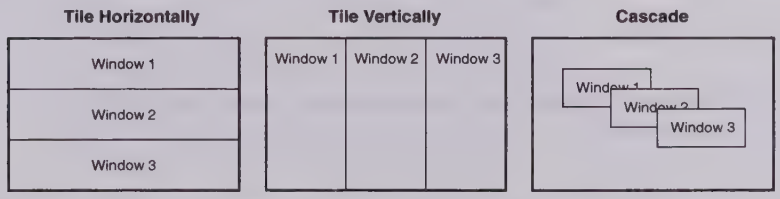


Figure 2-7 Tile Horizontally, Tile Vertically, and Cascade Window Arrangements

2.10. Closing the Results Windows

When you close the current results window, if other windows are displayed, the next available window becomes the current window. Closing the last results window for Examine closes the capture buffer, and the display area of the screen is empty.

The Close All command closes all of the currently displayed results windows for all of the open capture buffers. In Examine, Close All also closes all of the capture buffers.

To close the current results window or all windows:

- Use the Close or Close All commands on the Window menu.

2.11. Switching Between Windows Applications

When you have more than one DA-3x or Microsoft Windows application running at the same time, you can switch between the applications. The application that you are currently working with is the active application and always appears in the foreground. Table 2-5 provides the methods for switching between applications using the keyboard.

Task	Keyboard Action
To cycle through the open application windows and select the desired application,	Press Alt+Esc
To cycle through the open application icons and select the desired application	Press Alt+Tab until the icon appears and then release the keys; the selected application comes to the foreground

Table 2-5 Switching Between Windows with the Keyboard

Table 2-6 provides the methods for switching between applications using the mouse.

Task	Mouse Action
To cycle through the open application windows and select the desired application,	If the application is visible, click anywhere in the application's window
To cycle through the open application icons and select the desired application	Click on the application icon

Table 2-6 Switching Between Windows with the Mouse

Tip:

To switch between applications, choose Switch To from the Windows Control menu.

2.12. Saving Results Statistics to an Export File

The Real Time Control menu provides options that enable you to save the content of the current result window to either a CSV file or a test file for export to spreadsheet or word processing applications.

To save statistics to an export file:

1. From the Control menu, choose Save to Export File, then choose either Export to CSV or Export to Text.

   The Save Export File dialog box is displayed.

2. Type the name of the file in which you want to store the content of the results window in the filename box and choose the OK button.

   The data in the current results window is stored in the file you specified with the extension.TXT or .CSV, depending on the type of export file you selected. You return to the Real Time application screen.

2.13. Interacting with Two Analyzers and Two Network Interfaces

You can connect and run two analyzers and network interfaces at the same time with the DA-3x. When you start the DA-3x for Windows, each network interface that is detected during startup is listed in the Installed Interfaces section of the Launch Pad screen. You set up each interface separately using the corresponding Setup button on the Launch Pad screen.

The tasks covered in this section are:

- starting Capture or Monitor on two network interfaces
- starting an application on two network interfaces
- shifting the focus from one network interface to another
- performing tasks on two network interfaces
- running different applications on two network interfaces

2.13.1. Starting Capture or Monitor on Two Network Interfaces

The checkboxes in the Installed Interfaces box on the Launch Pad are the switches that specify which interfaces will be active when you run Capture or Monitor. When the checkbox is selected, the corresponding interface is enabled. Then, when you choose the Capture or Monitor button from the Launch Pad, the task automatically starts on the enabled interface.

To start Capture or Monitor on two network interfaces:

1. Enable the interfaces on which you want to run the application by choosing the he corresponding checkboxes.
2. Choose the Capture or Monitor button.

   The application is started on the enabled interfaces.

2.13.2. Starting an Application on Two Network Interfaces

The startup dialog box that is displayed when you start an application serves the same purpose as the checkboxes in the Installed Interfaces box of the Launch Pad. If you have only one network interface installed, this dialog box allows you to confirm that you want to start the application in the currently selected test mode, with the specified setup, on the installed interface. If you have two interfaces installed, the startup dialog box includes checkboxes that allow you to select the interfaces on which you want to start the application.

To start an application on two network interfaces:

1. Choose one of the application buttons from the Launch Pad.

   The Start Application dialog box is displayed.
2. Choose the checkboxes that correspond to the network interfaces on which you want to run the application

   The application is started on each network interface that you choose.

2.13.3. Shifting the Focus from one Network Interface to Another

If you are using two network interfaces, the 1,2 command on the Control menu lists all the active analyzers, and allows you to shift your focus from one analyzer to another.

When you are running an application on two network interfaces, the results windows that show the application's activity on each instrument are displayed in a "stack" on the screen. The 1,2 command enables you to change the focus, bringing the windows for the selected interface to the top of the stack so that you can see the statistics for the interface being monitored.

Similarly, if you want to close an application on one network interface while leaving it running on others, the 1,2 command allows you to specify which interface is addressed when you choose the Stop Interface command.

If you are running two network interfaces of different types and you change focus from one interface type of another, the options on the toolbar change to match the interface that is “in focus”.

To focus on the activity on a particular network interface:

- From the Control menu (shown in Figure 2-8) , choose the 1,2 command for the network interface you want to focus on.

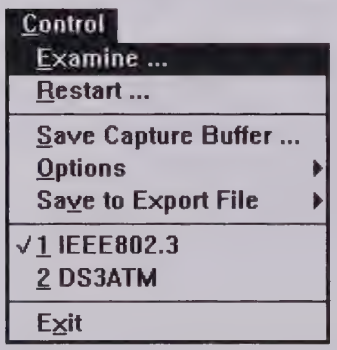


Figure 2-8 Display Menu Commands

The results window for the selected network interface comes to the top of the stack.

Tip:

Clicking on any part of a window brings that window to the top of the stack and changes the focus to the network interface that the window is associated with.

2.13.4. Performing Tasks on Two Network Interfaces

If you are using two network interfaces, certain options on the Control menu present a task dialog like the one shown in Figure 2-9 to enable you to specify which instrument's operation to address.

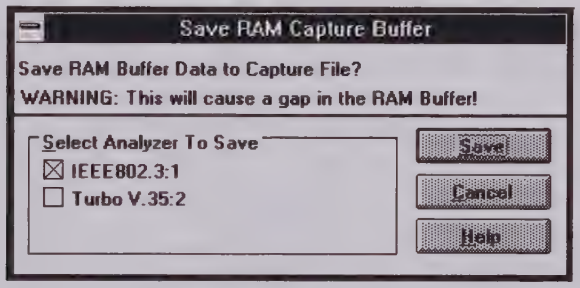


Figure 2-9 Sample Dual Task Dialog Box

Similar dialogs are presented to enable you to perform such Control menu tasks as:

- stopping or restarting realtime analysis
- saving data in the capture buffer to a file
- starting Examine from Realtime

To change the operation on a specific network interface:

1. Choose the task from the Control menu that you want to perform.

   The appropriate task dialog is displayed.

2. Choose the checkbox for the network interface on which you want to perform the task.
3. Choose the button to perform the task.

2.13.5. Running Different Applications on Two Network Interfaces

The DA-3x provides dual analyzer capability that enables you to operate two analyzers and network interfaces concurrently, with different applications running on each instrument. For example, if you had one Ethernet segment and one Token Ring connected through a router, you could set up a test configuration using a DA-3x with the following applications:

- FLEXMIT3 running on the Ethernet network interface connected to the Ethernet segment
- Token Ring Smart Monitor running on the Token Ring network interface to the Token Ring

Hints for running different applications on two interfaces:

- Make sure you set up each network interface appropriately for the application you want to run.
- Remember that Capture or Monitor will start on all enabled interfaces. If you only want to run one of these applications on a single network interface, enable only that network interface, then start the application.
- When your first application is running, you need to return to the Launch Pad to start the next one. Press Ctrl & Esc to display the Task List and choose the DA-3x Launch Pad task to display the Launch Pad.
- When you choose an application button, the Start Launch Pad Application dialog box is displayed. If you have more than one network interface connected that would be compatible with the selected application, the Start Application dialog box includes a checklist to allow you to choose the instrument on which you want to start the application. Remember that an instrument does not have to be enabled to run an application on it.
- When all the applications are running you can use the 1,2 command on the Real Time Control menu to switch focus from one analyzer to another.

Note:

The DA-3x runs one application from an assignable button at a time. To run a second application, choose one from the Application List.

3. Launch Pad

During installation, the Setup program automatically creates the Launch Pad icon and puts it in the StartUp program group. When you start up the DA-3x, it automatically runs Windows and the DA-3x for Windows software and displays the Launch Pad screen.

The Launch Pad screen (Figure 3-1) provides access to all of the features of the DA-3x for Windows software.

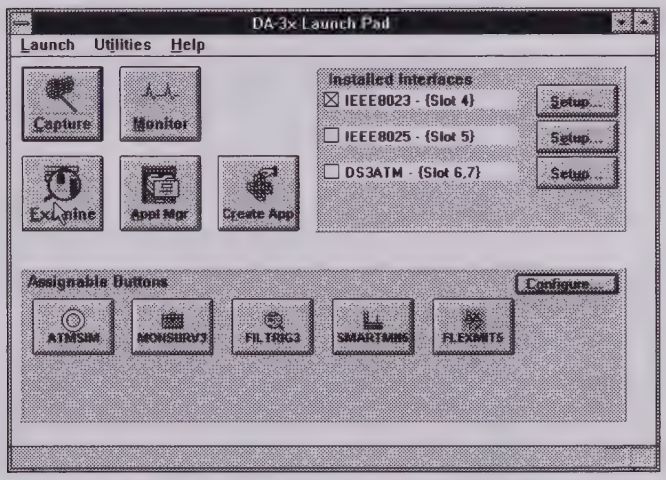


Figure 3-1 Launch Pad Screen

Note:

If the DA-3x for Windows software and the character-based DA-3x software are both installed on your DA-3x, then a prompt appears when you start up the DA-3x which allows you to choose which software you want to run.

3.1. Starting a Launch Pad Task

The five task buttons on the Launch Pad screen allow you to perform the main functions of the DA-3x at the selection of a button. Table 3-1 illustrates the five task buttons and describes the actions for each one.

Button	Action
	Captures and stores network traffic in the capture buffer. For information on Capture, refer to Chapter 4 of this guide.
	Monitors network events and displays the results in graphs and charts. For information on Monitor, refer to Chapter 5 of this guide.
	Examines captured frames, displays frame information, searches for specific frames and filters captured frames. For information on Examine, refer to Chapter 6 of this guide.
	Manages applications and performs tasks like loading, running, compiling, saving, combining, and deleting applications. For information on Application Manager, refer to Chapter 7 of this guide.
	Creates a new application and specifies setup information such as analyzer configuration, network interface, disk capturing, and protocols on the protocol stack. For information on Create Application, refer to Chapter 8 of this guide.

Table 3-1 Launch Pad Task Buttons

3.2. Enabling a Network Interface

When you monitor or capture network traffic, you specify the network interface that you want to use by enabling it. The installed interfaces section of the Launch Pad screen (Figure 3-2) displays the installed network interfaces and their corresponding slot numbers.

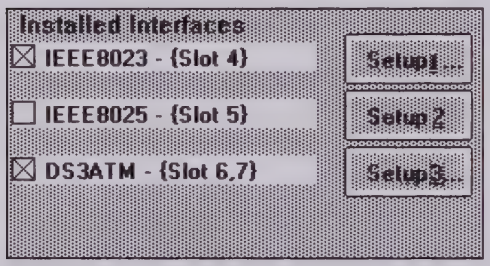


Figure 3-2 Installed Interfaces Section

To enable a network interface:

- Choose the checkbox next to the network interface that you want to enable.

  A check mark appears in the checkbox to indicate that the network interface has been enabled.

You can enable two network interfaces concurrently. However, since slots 4 and 5 share a common bus and slots 6 and 7 share a common bus, you cannot enable different network interfaces in 4 and 5, or 6 and 7 concurrently. Table 3-2 lists sample concurrent compatibility.

Interface/Slot Compatiblity					
4 and 6 LAN	5 and 7 LAN	4 LAN and 6&7 WAN	5 LAN and 6&7 WAN	4&5 WAN and 7 LAN	4&5 WAN and 6 LAN

Table 3-2 Network Interface Slots — Sample Concurrent Compatibility

3.3. Setting Up a Network Interface

The Setup option allows you to set up parameters for a network interface such as the network type, test mode, nodenames, and network filters. The DA 3x displays a Setup button beside each installed network interface on the Launch Pad screen. The options that you can set vary depending on the network interface. Information on each specific network interface is available from the on-line help (see Chapter 1, "How to Use On-Line Help").

To set up a network interface:

1. From the Launch Pad screen, choose the Setup button for the network interface that you want.
2. Make any desired changes to the setup information on the Setup dialog box (Figure 3-3) and choose the OK button.

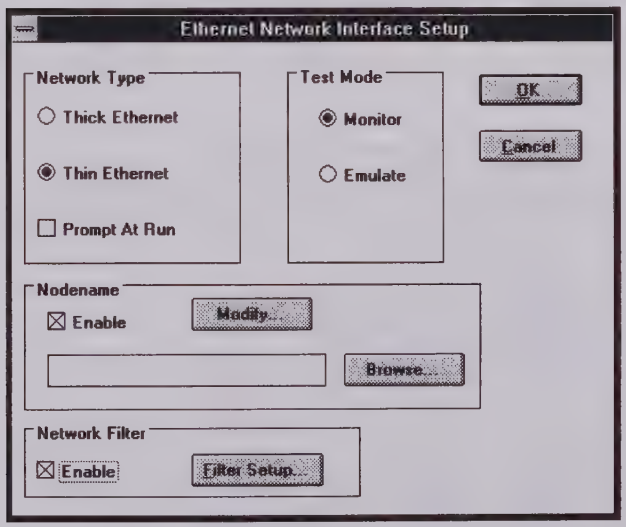


Figure 3-3 Sample Ethernet Network Interface Setup Dialog Box

3.4. Setting Up the Analyzer

The Advanced Setup dialog box allows you to configure one of the DA-3x's analyzers, including setup information for the following configuration items:

- Protocol Stack
- RAM Capture
- Playback
- Frame Slicing
- Initial Display
- Character Code

You can change the analyzer setup used when running Capture or Monitor by choosing the Analyzer 1 Setup or Analyzer 2 Setup command from the Launch Pad Utilities menu.

Note:

To change the analyzer setup for an application that has been assigned to an Assignable Button on the Launch Pad, choose the Configure button and follow the steps in "3.5 Configuring Assignable Buttons".

To set up an analyzer:

1. Choose the appropriate analyzer command (Analyzer 1 Setup or Analyzer 2 Setup) from the Launch Pad Utilities menu.

   The Advanced Setup dialog box appears (Figure 3-4).

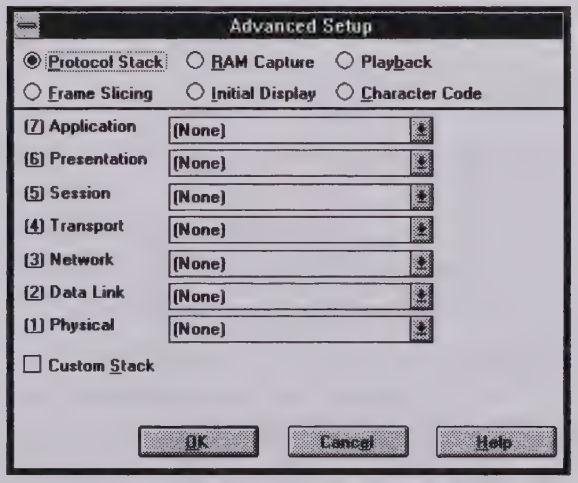


Figure 3-4 Advanced Setup Dialog Box

2. Select any of the setup options and set up the corresponding parameters.
3. Choose the OK button.

   You are returned to the Launch Pad screen.

3.4.1. Setting Up the Protocol Stack

The Protocol Stack Setup options enable you to load protocols on the protocol stack so that the DA-3x can decode the network traffic. A protocol can be loaded at its default layer or at any layer that you choose. This is controlled by the Custom Stack feature as follows:

- when this feature is disabled, you can only select protocols to load at their default layer
- when this feature is enabled, you can load any protocol at any layer

Note:

For the DA-3x to be able to decode a protocol, the software for that protocol must be installed and the protocol must be identifiable by the protocol at the preceding layer. A protocol that cannot be identified by the preceding protocol can be decoded only if you load that protocol and the one that precedes it at the appropriate layers on the protocol stack.

When analyzing WAN traffic, you must load the first protocol on the protocol stack, for example, Frame Relay, HDLC, or SDLC. Also, because WAN protocols typically lack the ability to detect the next layer protocol, it is advisable to load the upper layer protocols that you want to decode on the stack as well. The physical layer is automatically set internally to the interface you selected, such as V.24.

3.4.1.1 Loading a Protocol on the Stack

You can load a protocol on the protocol stack at its default layer or at any layer that you choose.

To load a protocol on the protocol stack:

1. On the Advanced Setup dialog box, choose the Protocol Stack option.

   The Protocol Stack Setup (Figure 3-4) appears.
2. Do one of the following:
   - To load a protocol at any layer, choose the Custom Stack checkbox to enable the custom stack feature.
   - To load at the default layer, choose (toggle off) the Custom Stack checkbox to disable the custom stack feature.
3. Move the cursor to the layer where you want to load the protocol.

4. Use the Up Arrow or Down Arrow to scroll through the list of available protocols and select the protocol that you want to load.
5. If the selected protocol has a Setup button, then choose the Setup button and make any necessary changes to the protocol setup.

3.4.1.2 Setting Up a Protocol

For the Glue, HDLC, SDLC, LAPB, LAPD, and Frame Relay protocols, a Protocol Setup dialog box is available that allows you to determine parameters such as address size and modulo and how the DA-3x interacts with the protocol software.

To set up a protocol:

1. On the Advanced Setup dialog box, choose the Protocol Stack option.

   The Protocol Stack Setup (Figure 3-4) appears.
2. Load the desired protocol on the protocol stack.

   If a Setup button is available, it appears next to the layer protocol box.
3. Choose the Setup button.

   The Protocol Setup dialog box (Figure 3-5) appears.

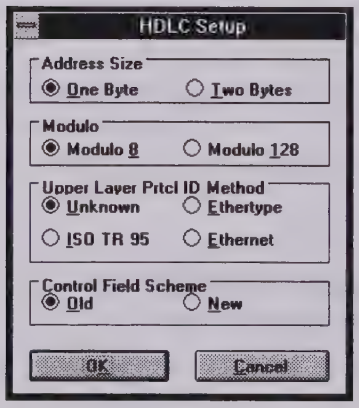


Figure 3-5 Sample Protocol Setup Dialog Box

4. Make any necessary changes to the protocol setup.
5. Choose the OK button.

   You return to the Protocol Stack Setup.

3.4.1.3 Decoding Proprietary Protocols

The DA-3x's ability to decode all traffic correctly is limited if the traffic includes proprietary protocol encapsulations that the instrument's protocol software does not decode.

The Glue protocol software lets you obtain accurate protocol decodes at all layers, even when proprietary protocol information is present, by enabling you to define fields that account for the bytes occupied by the proprietary protocol. When loaded at the appropriate layer and customized in this way, the Glue protocol software enables the DA-3x to perform a rudimentary decode on the intervening protocol encapsulation, and protocols loaded at succeeding layers can then be decoded accurately. The Glue protocol software can be loaded at any layer on the protocol stack and at as many layers as needed. However, all protocols loaded on the protocol stack must be loaded in the order in which they occur in the frame, from lowest to highest layer.

You can configure the Glue protocol software by defining protocol fields on the Glue Protocol Definition dialog box. You can access the Glue Protocol Definition dialog box from either the Protocol Stack Setup of the Create Application screen or the Modify Protocol Stack dialog box.

Once the protocol software is configured and loaded on the protocol stack, the Glue protocol software displays decode information in the Protocol Summary and Protocol Detail windows for the fields you have defined.

To access the Glue Protocol Definition dialog box:

1. From either the Protocol Stack Setup or the Modify Protocol Stack dialog box, load Glue at the desired layer of the protocol stack.

   The Setup button appears next to the layer box where you loaded Glue.

2. Choose the Setup button.

   The Glue Protocol Definition dialog box (Figure 3-6) is displayed.

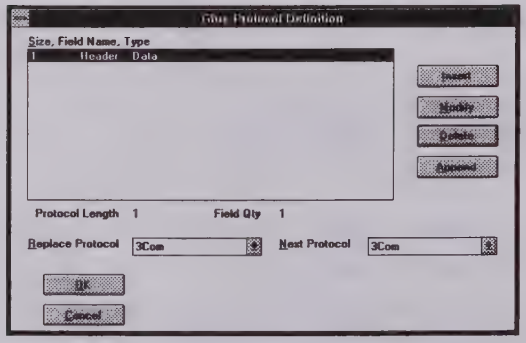


Figure 3-6 Glue Protocol Definition Dialog Box

3. Choose the Append button for each field you define.

The Field Definition dialog box (Figure 3-7) is displayed.

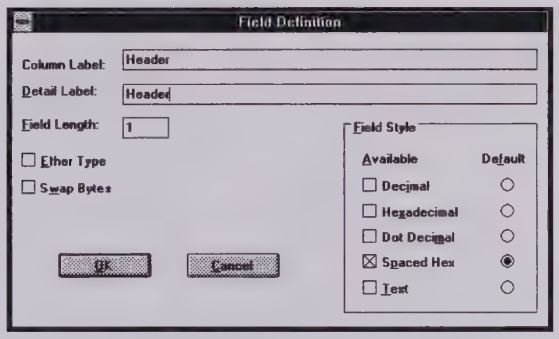


Figure 3-7 Field Definition Dialog Box

4. Define the fields that make up the protocol that you want to decode.

   You can specify the length of the field and the format used for displaying the field contents. If an Ether Type field is in the proprietary protocol, you can specify whether or not the next protocol is detected based on its Ether Type value. The Swap Bytes box allows you to specify whether or not the bytes of the field are swapped for decoding.

5. Choose the OK button after each field is defined.

   You return to the Glue Protocol Definition dialog box (Figure 3-8) where the size, field name, and type are shown.

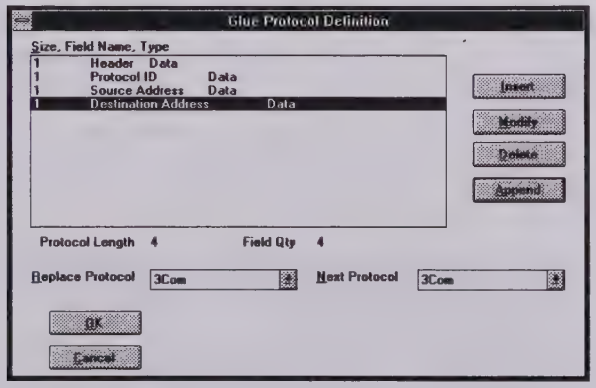


Figure 3-8 Glue Protocol Definition Dialog Box with Entries

6. Specify the protocol that is being replaced and the protocol to be decoded at the next layer.

The alternative way to indicate which protocol follows Glue in the Glue Protocol Definition dialog box, is shown in Table 3-3.

Ether Type	Next Protocol	Decoding of data fillowing Glue
Set	Set	As specified in Next Protocol field.
Set	Unknown	As specified in Ether Type field.
Not Set	Unknown	According to stack specification.

Table 3-3 Next Protocol Specification

7. Choose the OK button when you have finished defining all of the proprietary protocol fields.

   You return to either the Protocol Stack Setup or the Modify Protocol Stack dialog box.

When you run your application and access the GLUE decode screen (Figure 3-9), the DA 3x will display decodes for the proprietary protocol with the headers and lengths that you have defined.

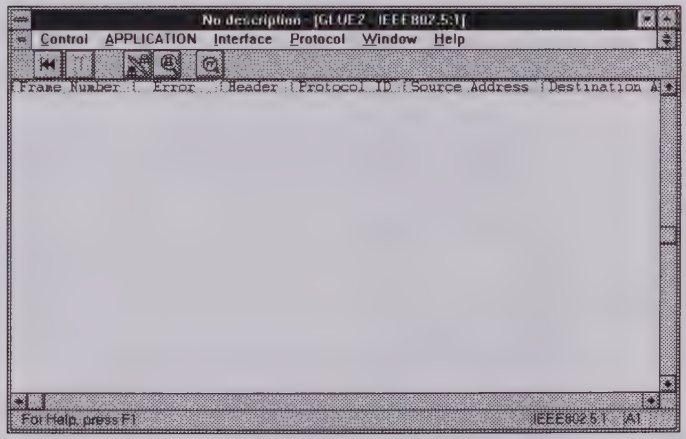

No description - [GLUE2 - IEEE802.5:1]
Control APPLICATION Interface Protocol Window Help
Frame Number Error Header Protocol ID Source Address Destination A
For Help, press F1
IEEE802.5:1 A1

Figure 3-9 Glue Decode Screen

3.4.2. Setting Up RAM Capturing

You can set up RAM capturing to have the DA-3x capture network traffic during Real Time operation and store the captured frames in a RAM buffer. RAM capture setup specifies the size of the capture buffer and what happens when the buffer becomes full.

3.4.2.1 Selecting the Buffer Size for RAM Capturing

You can select the amount of RAM available for RAM capturing. The actual size of the available memory, for options other than MIN, is determined by the amount of RAM installed on the analyzer. The analyzer RAM is shared by the capture buffer and the DA 3x operating software, which requires at least 500 KB to perform analysis tasks. This leaves the remaining RAM for capture buffer use. For example, if your DA-3x has 4 MB of analyzer RAM and you select 100% as the RAM Capture Size, then the size of the capture buffer is 3.5 MB.

To select the buffer size for RAM capturing:

1. On the Advanced Setup dialog box, choose the RAM Capture option.

   The RAM Capture Setup (Figure 3-6) appears.

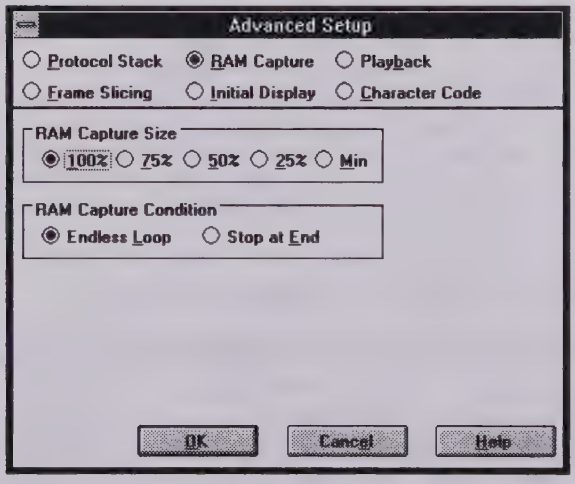


Figure 3-10 RAM Capture Setup

2. In the RAM Capture Size box, choose one of the RAM Capture Size options:
   - 100%
   - 75%
   - 50%

- 25%
- Minimum (64 KB)

The default RAM Capture Size is 100%, which is the maximum buffer size for RAM Capture.

3.4.2.2 Selecting the Stop Condition for RAM Capturing

You can select the method that the DA-3x uses when it reaches the end of the RAM capture buffer. The stop condition for RAM capturing controls how the DA-3x responds when it has filled the buffer with captured traffic. The options are to stop capturing network traffic to the capture buffer or to overwrite the existing capture buffer starting at the beginning of the buffer.

To select the stop condition for RAM capturing:

1. On the Advanced Setup dialog box, choose the RAM Capture option.

   The RAM Capture Setup (Figure 3-6) appears.

2. In the RAM Capture Condition box choose one of the stop condition options:

   - Endless Loop
   - Stop At End

   The default stop condition is Endless Loop.

Note:

The DA-3x always captures traffic during real time operation and the stop condition parameter governs how the buffer is managed. However, when you choose Capture application from the Launch Pad, the stop condition defaults to Stop At End. The Endless Loop option does not apply when you run Capture.

3.4.3. Setting Up the Playback of a Capture File

The Internal Playback feature allows you to play back network traffic from a capture file to the DA-3x as if it were traffic on a live network.

Internal Playback is useful when you have captured network traffic and you want to view the same traffic using an application. When you enable the playback feature to use with an application, you must specify the path and file name of the capture file that you want to play back.

3.4.3.1 Selecting a Capture File to Play Back

Setting up the playback of a capture file requires selecting an existing capture file to play back.

To select a capture file to play back:

1. On the Advanced Setup dialog box, choose the Playback option.

   The Playback Setup (Figure 3-7) appears.

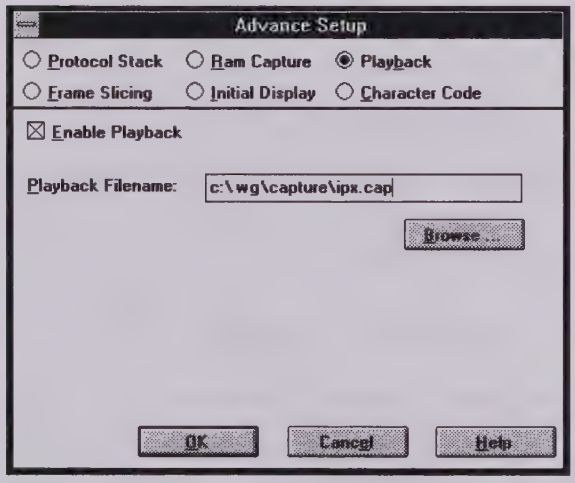


Figure 3-11 Playback Setup

2. Choose the Enable Playback checkbox to enable the playback of the capture file.
3. Choose the Browse button to specify the path and file name of the capture file.

   The Open Playback File dialog box (Figure 3-8) appears.

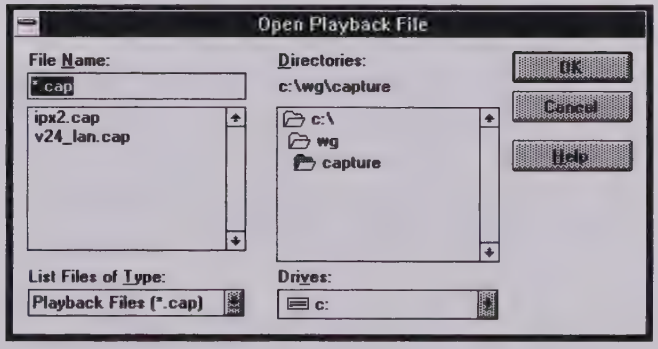


Figure 3-12 Open Playback File Dialog Box

4. Select the capture file that you want to use.

   If the capture file that you want to use is not listed in the Filename box, locate it by doing one or more of the following:

   - in the Drive box, select a different drive
   - in the Directories box, select a different directory
   - in the List Files of Type box, select All Files

5. Choose the OK button.

   You return to the Advanced Setup dialog box.

6. Choose the OK button.

   Playback is enabled. When you start an application, the file you have selected will be played back to the instrument.

Tip:

If you know the path and name of the capture file that you want to use, type this information in the Filename box.

3.4.3.2 Enabling or Disabling the Playback of a Capture File

Once you have enabled the playback feature and specified the name of the capture file, you may find that you need to disable the playback of the capture file. From the Playback Setup, you can disable playback without losing the specified capture file. Then you can enable playback if you want to use it at a later time.

To disable the playback of a capture file:

1. On the Advanced Setup dialog box, choose the Playback option.

   The Playback Setup is displayed.

2. Choose the Enable Playback checkbox.

   The Enable checkbox and the Playback Filename box are now empty.

To enable the playback of a capture file:

1. On the Advanced Setup dialog box, choose the Playback option.

   The Playback Setup is displayed.

2. Choose the Enable Playback checkbox.

   A check mark appears in the Enable checkbox. The specified capture file and the Browse button are displayed.

3.4.4. Setting Up Frame Slicing

Frame slicing allows you to shorten the data frame before it is passed to the analyzer for processing. You might want to adjust the frame in this way if you are interested in the frame header and you have no use for the user data contained within the frame.

Frame slicing starts at the beginning of the frame. For example, if you select the 128-byte frame slicing option, all data after the first 128 bytes is discarded before the frame reaches the analyzer.

To set up frame slicing:

1. On the Advanced Setup dialog box, choose the Frame Slicing option.

   The Frame Slicing Setup (Figure 3-9) appears.

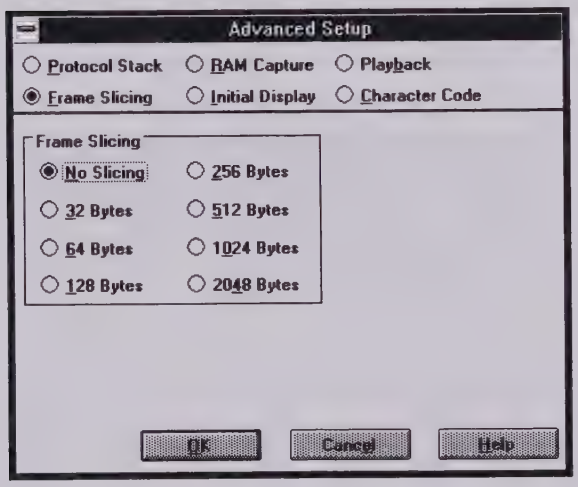


Figure 3-13 Frame Slicing Setup

2. In the Frame Slicing box, choose one of the frame slicing options:
   - no slicing
   - 32 bytes
   - 64 bytes
   - 128 bytes
   - 256 bytes
   - 512 bytes
   - 1024 bytes
   - 2048 bytes

Frame slicing is set and a check mark appears next to the Frame Slicing command in the Checklist.

Caution:

If you inadvertently slice a frame in the middle of a protocol, that protocol becomes invalid for decoding.

3.4.5. Selecting the Initial Results Windows

The Network Status window is the default window that displays when you run an application. If you want a different window to automatically display, you can select which results windows are displayed automatically by using the Initial Display Setup.

To select the initial results windows:

1. From the Advanced Setup dialog box, choose the Initial Display option.

   The Initial Display Setup (Figure 3-10) appears.

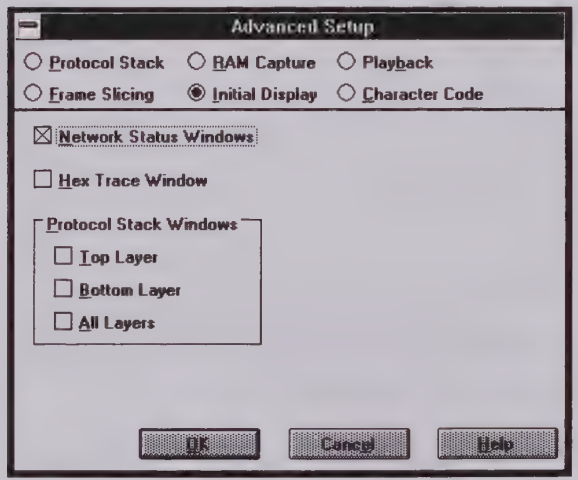


Figure 3-14 Initial Display Setup

2. Choose one or more of the following results windows by choosing the corresponding checkbox:
   - Network Status Windows
   - Hex Trace Window
   - Protocol Stack Windows — First Layer, Bottom Layer, or All Layers

   The initial results windows are selected and a check mark appears next to the Initial Display command in the Checklist.

Note:

When you select the Network Status Windows option, the status window that is displayed if you are setting up an Ethernet, Token Ring, or FDDI network interface, is the Network Status Window. If you are setting up a WAN network interface, it is the Receive Status Window.

3.4.6. Selecting the Character Code

Advanced Setup provides the option to select the data transmission character code, which controls the way the DA-3x interprets the data that it captures from the network.

The character code selection affects the display of the Hexadecimal Trace window. The network test compile also uses the character code to interpret data strings received from the network.

To select the character code:

1. On the Advanced Setup dialog box, choose the Character Code option.

   The Character Code Setup (Figure 3-11) appears.

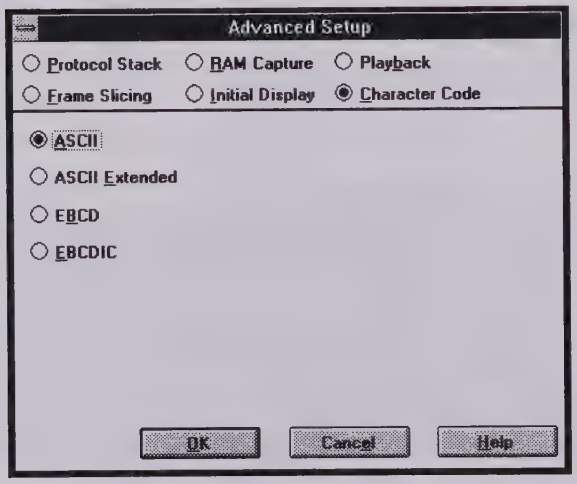


Figure 3-15 Character Code Setup

2. Choose one of the Character Code options:
   - ASCII
   - ASCII Extended
   - EBCD
   - EBCDIC

The Character Code is selected and a check mark appears next to the Character Code command in the Checklist.

3.5. Configuring Assignable Buttons

The assignable buttons section (Figure 3-12) at the bottom of the Launch Pad screen enables you to assign up to 12 of the applications that you use most frequently to buttons on the Launch Pad. You can then load and run an application by choosing the corresponding button on the Launch Pad.

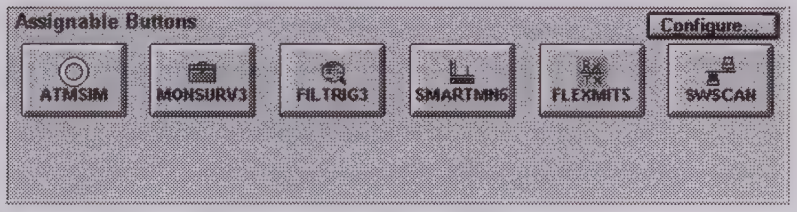


Figure 3-16 Assignable Buttons Section of the Launch Pad Screen

To configure an assignable button:

1. Choose one of the following:
   - the Configure button from the Assignable Buttons section
   - the Configure Buttons command from the Utilities menu

   The Configure Assignable Buttons dialog box (Figure 3-13) appears.

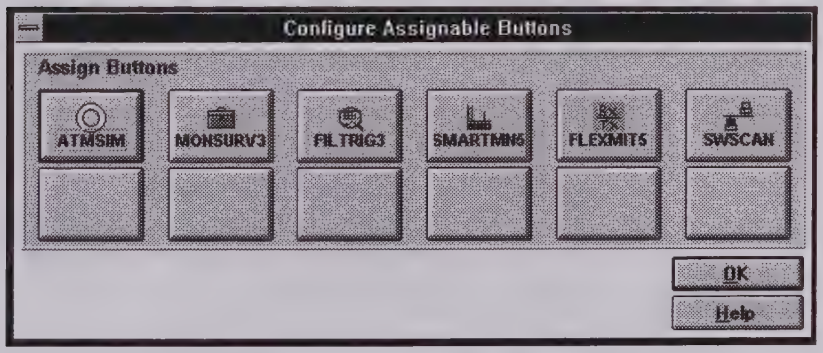


Figure 3-17 Configure Assignable Buttons Dialog Box

2. Choose the button to which you want to assign the application.

   The Configure Single Button dialog box (Figure 3-14) appears.

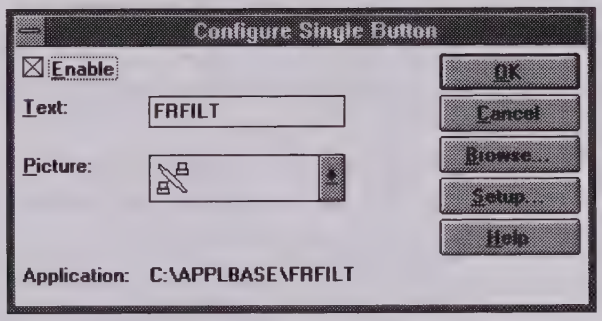


Figure 3-18 Configure Single Button Dialog Box

3. Choose the Enable and Browse buttons.

   The Select Application dialog box (Figure 3-15) appears.

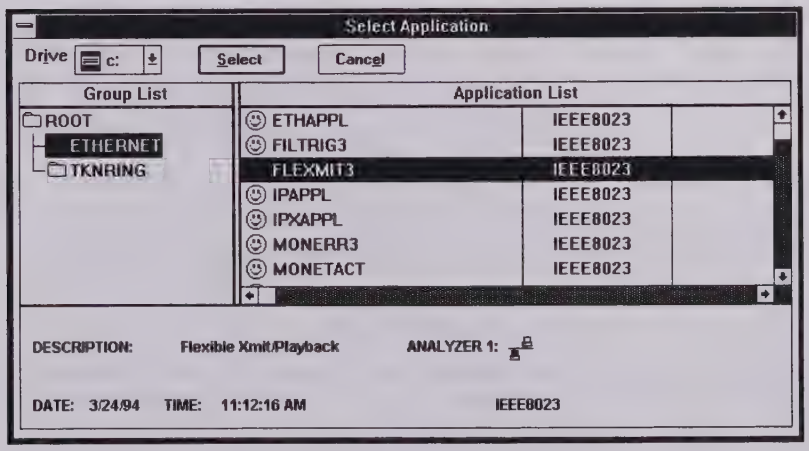


Figure 3-19 Select Application Dialog Box

4. Choose an application from the Application List box and choose the Select button.

   If the application is not listed in the Application List box, locate it by doing one of the following:

   - select a new application group from the Group List box
   - select a new drive in the Drive box

   The Text and Application boxes of the Configure Single Button dialog box display the name and path for the application.

5. In the Picture box, select the picture to display on the button.

The picture is displayed in the Picture box.

6. Choose the OK button.

   You return to the Configure Assignable Buttons dialog box and the new button has been added.

7. Choose the OK button.

   You return to the Launch Pad and the new button has been added.

3.5.1. Enabling or Disabling a Defined Application Button

Once you have defined an application button, you may find that you need to disable it. You can disable a button without losing its assigned application, text, or icon. This feature is useful, for instance, if someone else is using your DA-3x and you want to protect an application from accidental changes. Then you can enable the application button when you want it to be visible again.

To disable or enable a defined application button:

1. Choose the Configure button from the Launch Pad screen.

   The Configure Assignable Buttons dialog box (Figure 3-13) appears.

2. Choose the application button you want to disable or enable.

   The Configure Single Button dialog box (Figure 3-14) appears.

3. Choose the Enable checkbox.

   The Enable checkbox and the application, text, and picture boxes are now empty or grayed out.

4. Choose the OK button.

   You return to the Configure Assignable Buttons dialog box and the disabled application button is no longer labeled with the application name and icon.

5. Choose the OK button.

   You return to the Launch Pad screen and the disabled application button is not displayed.

3.5.2. Changing an Application Button's Picture

You can change the picture or icon that is assigned to an application button.

To change a button's picture:

1. Choose the Configure button from the Launch Pad screen.

   The Configure Assignable Buttons dialog box (Figure 3-13) appears.

2. Choose the application button you want to change.

The Configure Single Button dialog box (Figure 3-14) appears.

3. Move the cursor to the Picture box.
4. Scroll through the list of available pictures and choose the one that you want to use.

   The selected picture is displayed in the Picture box.
5. Choose the OK button.

   You return to the Configure Assignable Buttons dialog box and the new picture is displayed on the application button.
6. Choose the OK button.

   You return to the Launch Pad and the new picture is displayed on the application button.

3.5.3. Changing an Application Button's Application

You can change the application that is assigned to an application button.

To change a button's application:

1. Choose the Configure button from the Launch Pad screen.

   The Configure Assignable Buttons dialog box (Figure 3-13) appears.
2. Choose the application button that you want to change.

   The Configure Single Button dialog box (Figure 3-14) appears.
3. Choose the Browse button.

   The Select Application dialog box is displayed.
4. Select the application that you want to assign to the button from the Application List box.

   If the application that you want to assign is not listed in the Application List, do one or more of the following:

   - in the Group List box, select a new group
   - in the Drive box, select a new drive
5. Choose the Select button.

   The path for the application is displayed in the Application box. The Text box and Picture box have not changed. They contain the values previously assigned to the application button.
6. To change the text that displays on the application button, type the new text in the Text box.
7. To change the picture that displays on the application button, select a new picture in the Picture box.

8. Choose the OK button.

   You return to the Configure Assignable Buttons dialog box and the new application has been assigned to the application button. Any changes that you made to the text and picture are also displayed.

3.5.4. Changing an Application Button's Text

When you assign an application to an application button, the DA-3x automatically uses the application's eight-character filename as the text that appears on the application button. From the Configure Single Button dialog box, you can change the application button's text.

To change an application button's text:

1. Choose the Configure button from the Launch Pad screen.

   The Configure Assignable Buttons dialog box (Figure 3-13) appears.

2. Choose the application button that you want to change.

   The Configure Single Button dialog box (Figure 3-14) appears.

3. Move the cursor to the text box.

4. Type the text that you want to appear on the application button in the Text box and choose the OK button twice.

   Because a proportional-spaced font is used, the length of the text varies depending on the width of the characters that you use. Typically, an application button can accommodate text up to 8 or 12 characters long.

5. Choose the OK button.

   You return to the Configure Assignable Buttons dialog box and the new text is displayed on the application button.

6. Choose the OK button.

   You return to the Launch Pad and the new text is displayed on the application button.

Tip:

You can assign an Alt+combination to an application button by inserting the ampersand symbol (&) in front of the character that you want to use in the application's text. For example, to assign the Alt+V combination to the MonSurv3 application button, type MonSur&v3 in the Text box.

3.5.5. Setting up the Analyzer for an Application

To change the analyzer setup used when running a specific application, choose the Setup button from the Configure Single Button dialog box to access the Modify Application screen and modify the application's setup information

For information on analyzer setup see Setting Up the Analyzer.

3.6. Performing a Hardware Test

The Test Hardware button on the About Launch Pad dialog box allows you to perform a test on the printed circuit board hardware for each installed module, including analyzer modules and line interface modules. The display provides the slot location, description, ID number, and test results for each module along with the version number for Launch Pad and customer support numbers.

To perform a hardware test:

1. Choose About DA-3x Launch Pad from the Help menu.

   The About DA-3x Launch Pad dialog box appears.

2. Choose the Test Hardware button.

   Launch Pad performs a test on the printed circuit board hardware for each module installed in the DA-3x and displays the results in the About DA-3x Launch Pad dialog box (Figure 3-16).

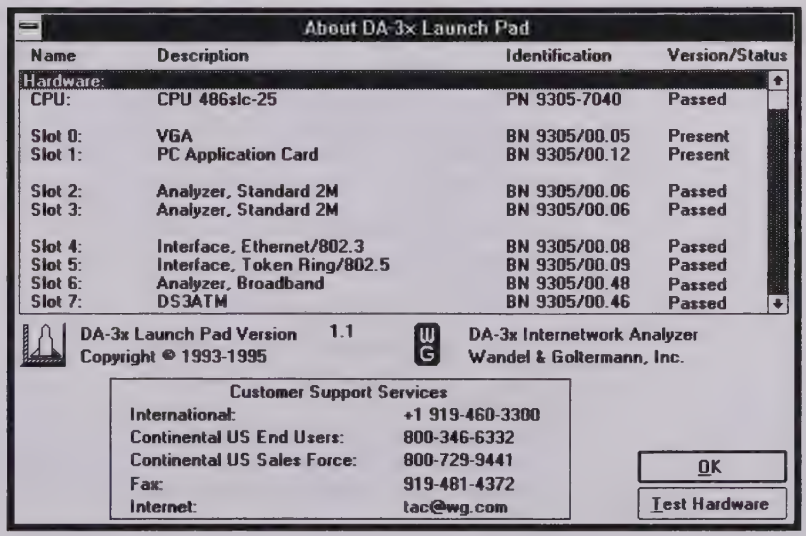

About DA-3x Launch Pad
Name
Description
Identification
Version/Status
Hardware:
CPU: CPU 486slc-25 PN 9305-7040 Passed
Slot 0: VGA BN 9305/00.05 Present
Slot 1: PC Application Card BN 9305/00.12 Present
Slot 2: Analyzer, Standard 2M BN 9305/00.06 Passed
Slot 3: Analyzer, Standard 2M BN 9305/00.06 Passed
Slot 4: Interface, Ethernet/802.3 BN 9305/00.08 Passed
Slot 5: Interface, Token Ring/802.5 BN 9305/00.09 Passed
Slot 6: Analyzer, Broadband BN 9305/00.48 Passed
Slot 7: DS3ATM BN 9305/00.46 Passed
DA-3x Launch Pad Version 1.1
Copyright © 1993-1995
DA-3x Internetwork Analyzer
Wandel & Goltermann, Inc.
Customer Support Services
International: +1 919-460-3300
Continental US End Users: 800-346-6332
Continental US Sales Force: 800-729-9441
Fax: 919-481-4372
Internet: tac@wg.com
OK
Test Hardware

Figure 3-20 About DA-3x Launch Pad Dialog Box

3.7. Displaying Software Version Number Information

Use the About DA-3x Launch Pad command to display the software version information for your DA-3x to determine whether or not you have the latest version of the core software, network interface software, and protocol software.

The About Launch Pad dialog box also displays:

- the installed CPU
- the display interface
- network interface software
- the analyzer modules
- the network interfaces
- protocol software
- the copyright notice

To display software version information:

1. Choose About DA-3x Launch Pad from the Launch Pad screen Help menu.
2. Use the scroll bar to scroll through the software version number information.

3.8. Returning to Launch Pad

Because the DA-3x for Windows software runs under Microsoft Windows, you can return to the Launch Pad without exiting the current screen. Windows allows you to have several applications or tasks running at the same time. For example, you may have chosen to examine captured frames by choosing the Examine task button from the Launch Pad. While the Examine screen is displayed, you may need to return to the Launch Pad to perform another task. You can return to Launch Pad without exiting the Examine screen.

To return to Launch Pad:

1. From the Control menu, choose Switch To.

   The Task List dialog box is displayed.

2. From the list of tasks, choose the Launch Pad.
3. Choose the Switch To button.

   The Launch Pad screen is displayed. You can switch back to the previous screen by using the Switch To command on the Control menu and choosing the appropriate task from the Task List dialog box.

Shortcut:

Press Alt-Tab until the Launch Pad icon is displayed. then release the keys and the Launch Pad screen comes to the foreground.

3.9. Exiting Launch Pad

You can use the Exit command on the Launch menu to exit Launch Pad and return to Program Manager. In Program Manager, you can perform normal Windows functions such as using the File Manager or Note Pad or running another Windows application.

When you exit Launch Pad, it asks if you want to close all other analyzer applications. This allows you to close all open tasks and applications at the same time.

To exit Launch Pad:

1. From the Launch menu, choose Exit.

   Launch Pad asks if you want to close all other analyzer applications.

2. Do one of the following:

   - To close all open tasks and applications and exit Launch Pad, choose the Yes button.
   - To exit Launch Pad without closing the open tasks and applications, choose the No button.
   - To return to Launch Pad without exiting to Program Manager, choose the Cancel button.

3.10. Restarting Launch Pad

If you exit the Launch Pad and need to restart it, use either of the following methods.

To restart Launch Pad from Program Manager:

♦ Choose the Launch Pad icon from the StartUp program group.

To restart Launch Pad from the DOS prompt:

♦ Type win at the DOS prompt and press Enter.

3.11. Launch Pad Menu Reference

The Launch Pad menu bar includes the following menus:

- Launch
- Utilities
- Help

The Launch Pad menu bar is illustrated in Figure 3-17 and Table 3-3 provides the menu items and their functions.

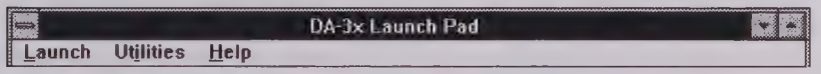


Figure 3-21 Launch Pad Menu Bar

Menu Item	Function
Launch	Provides the list of Launch tasks.
Utilities	Provides the commands for configuring application buttons.
Help	Accesses on-line help and displays version information.

Table 3-4 Launch Pad Menu Commands

3.11.1. Launch Menu

The Launch menu includes the commands described in Table 3-4.

Command	Function
Capture	Captures network traffic and stores it in the capture buffer.
Monitor	Monitors network events and displays the results in a variety of graphs and tables.
Examine	Examines and filters captured network traffic, displays frame information, and searches for specific frames.
Appl Mgr	Manages applications and performs tasks such as loading, running, compiling, saving, combining, and deleting applications.
Create Appl	Creates a new application or modifies an existing application and specifies setup information such as analyzer configuration, network interface, disk capturing, and the protocols loaded on the protocol stack.
Exit	Exits Launch Pad.

Table 3-5 Launch Menu Commands

3.11.2. Utilities Menu

The Utilities menu includes the commands described in Table 3-5.

Command	Function
Configure Buttons	Displays the Configure Assignable Buttons dialog box from which you can assign applications to the assignable buttons to make them more easily accessible.
Analyzer 1 or 2 Setup	Use the Analyzer 1 or 2 Setup command on the Utilities menu to display the Advanced Setup dialog box for Analyzer 1 or 2. From this dialog box you can change those aspects of the analyzer setup that are not related to the interface configuration.

Table 3-6 Utilities Menu Command

3.11.3. Help Menu

The Help menu includes the commands described in Table 3-6.

Command	Function
Contents	Displays the Contents screen of Help.
Using Help	Displays information on how to access on-line help.
About DA-3x Launch Pad	Displays the copyright notice, installed CPU information, display interface, analyzer modules, and line interfaces for your DA-3x.

Table 3-7 Help Menu Command

4. Capture

You can use the Capture application to save live network traffic into a temporary RAM capture buffer in order to view the frames. The Capture screen is displayed while the DA-3x performs pre-capture hardware and software configurations and opens the capture buffer to receive the captured traffic. As soon as capturing begins, the DA-3x starts the Examine application and displays the Frame Summary window, which reports frame size, protocol, and timestamp information for the frames in the capture buffer.

4.1. Starting Capture

Capture is one of the five main DA-3x for Windows applications that are available from the DA-3x Launch Pad.

To start Capture:

1. Choose the Capture button or choose Capture from the Launch menu.

   For Ethernet and Token Ring, if the Prompt At Run option is enabled, a dialog box such as Figure 4-1 displays.

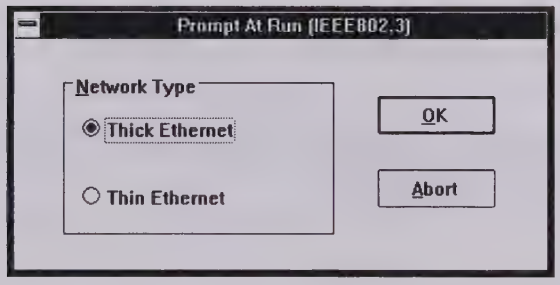


Figure 4-1 Sample Prompt At Run Dialog Box

2. If a Prompt At Run dialog box is displayed, make the appropriate choice and choose OK.

   Then the DA-3x begins capturing traffic from the network and displays the Examine screen (Figure 4-2).

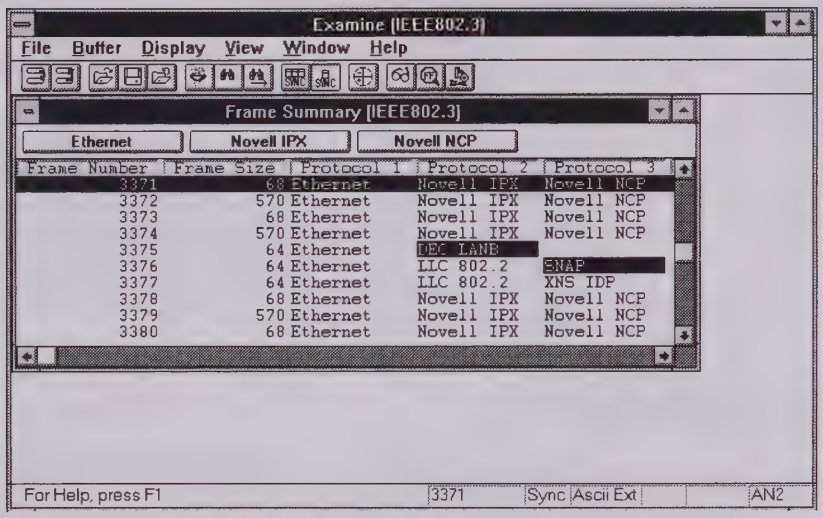

Examine [IEEE802.3]
File Buffer Display View Window Help
Frame Summary [IEEE802.3]
Ethernet
Novell IPX
Novell NCP
Frame Number | Frame Size | Protocol 1 | Protocol 2 | Protocol 3
3371 68 Ethernet Novell IPX Novell NCP
3372 570 Ethernet Novell IPX Novell NCP
3373 68 Ethernet Novell IPX Novell NCP
3374 570 Ethernet Novell IPX Novell NCP
3375 64 Ethernet DEC LANB
3376 64 Ethernet LLC 802.2 SNAP
3377 64 Ethernet LLC 802.2 XNS IDP
3378 68 Ethernet Novell IPX Novell NCP
3379 570 Ethernet Novell IPX Novell NCP
3380 68 Ethernet Novell IPX Novell NCP
For Help, press F1
3371
Sync Ascii Ext
AN2

Figure 4-2 Examine Screen

From the Examine screen you can view information about the traffic that has been captured into the DA-3x's RAM buffer.

Note:

To return to the Capture Screen to use its menu commands without exiting Examine, press Alt+Tab or use the Switch To command on the Control menu.

Figure 4-3 illustrates the Capture screen and its menu bar..

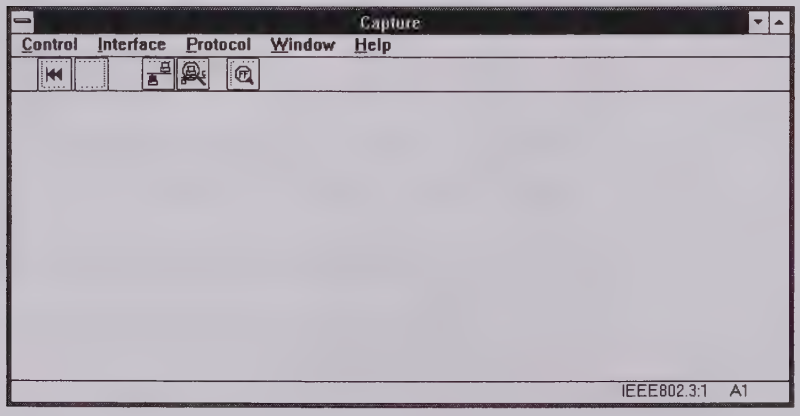


Figure 4-3 Capture Screen

4.2. Examining Captured Network Traffic

As soon as you choose Capture, the DA-3x starts Examine and displays the Frame Summary window, which enables you to view frame size, protocol, and timestamp information for the frames that have been stored in the capture buffer. You will also be able to analyze captured frames in Hexidecimal Trace, Protocol Summary and Protocol Detail windows. In addition, search and filter functions can be applied to frames in the buffer.

Capture continues to add captured traffic to the capture buffer until the buffer is full.

4.3. Saving Captured Frames to a New Capture File

Examine allows you to save the contents of the temporary capture buffer to a new and permanent capture file.

To use Examine to save the captured frames to a new capture file:

1. Choose Save As from the Examine screen's File menu.
2. A warning dialog box (Figure 4-4) appears.

   The DA-3x stops capturing network traffic while it is saving the current buffer to disk. The warning is to let you know that, for the period of time the buffer is being saved, the DA-3x will not be capturing traffic.

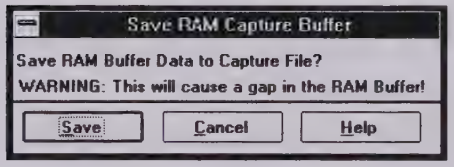

Save RAM Capture Buffer
Save RAM Buffer Data to Capture File?
WARNING: This will cause a gap in the RAM Buffer!
Save
Cancel
Help

Figure 4-4 Save RAM Capture Buffer

3. Choose the Save button.

   The Save Capture File dialog box (Figure 4-5) appears.

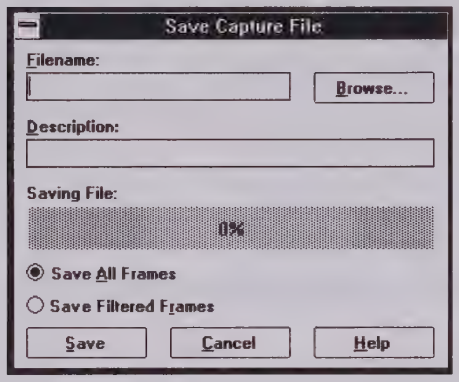


Figure 4-5 Save Capture File Dialog Box

4. Type a filename to use for the new capture file in the Filename box.
5. Choose the Browse button to save the file to a different drive or directory.

   The Capture Filename dialog box (Figure 4-6) appears allowing you to specify the drive, directory, or file type for the new capture file. Choose the OK button to return to the Save Capture File dialog box.

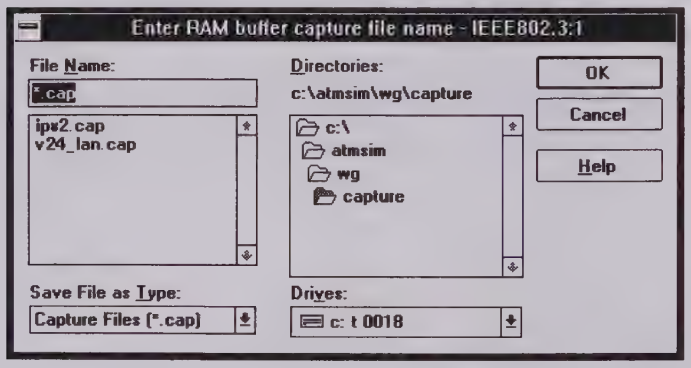


Figure 4-6 Capture Filename Dialog Box

6. Choose the Save button.

   Examine saves the contents of the temporary buffer to the specified permanent capture file. The percent done bar indicates the progress of the save. After Examine has saved the new capture file, you return to the Examine screen.

You can also use the Capture screen to save the temporary capture buffer to a permanent capture file.

To use Capture to save the captured frames to a new capture file:

1. From the Control menu, choose the Save Capture Buffer.

   The warning dialog box (Figure 4-4) appears.

2. Choose the Save button.

   The Capture Filename dialog box (Figure 4-6) appears allowing you to specify the drive, directory, or file type for the new capture file.

3. Choose the OK button.

   Capture saves the contents of the temporary buffer to the specified permanent capture file.

4.4. Exiting Capture

You can exit from Capture by choosing Exit from the Control menu. The Stop Realtime Analysis dialog box (Figure 4-7) is displayed. It enables you to exit Capture and provides options for exiting without saving any captured frames and for saving captured traffic to a capture file before you exit.

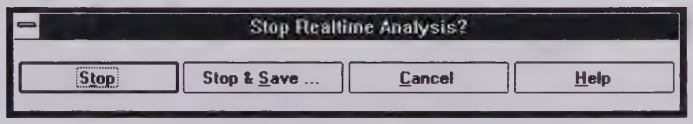


Figure 4-7 Stop Realtime Analysis Dialog Box

The Command Buttons have the following actions:

Button	Action
Stop	Stops realtime analysis without saving captured traffic, exits the application, and returns you to the Launch Pad window.
Stop and Save	Allows you to save the contents of the capture buffer to a file before exiting the application. Displays the Save RAM Capture Buffer dialog box.Stop and Save causes a gap in the data stored in the capture buffer.
Cancel	Returns you to the application. Capturing of network traffic is not interrupted.
Help	Displays on-line help information about the Stop Realtime Analysis dialog box.

4.5. Playing Back a Capture File

You can play back a capture file as part of an application for further analysis. When you capture network traffic, you can save the captured frames to a capture file.

Playing back a capture file requires that you create (from Create Application) or modify (from Application Manager) an application to include the playback setup (Figure 4-8).

For example, you could capture traffic from your network by choosing the Capture task button on the Launch Pad screen, save the captured frames to a capture file, and then modify the MonSurv application to use the capture file as the data source instead of the network. This allows you to view additional statistics for the network traffic.

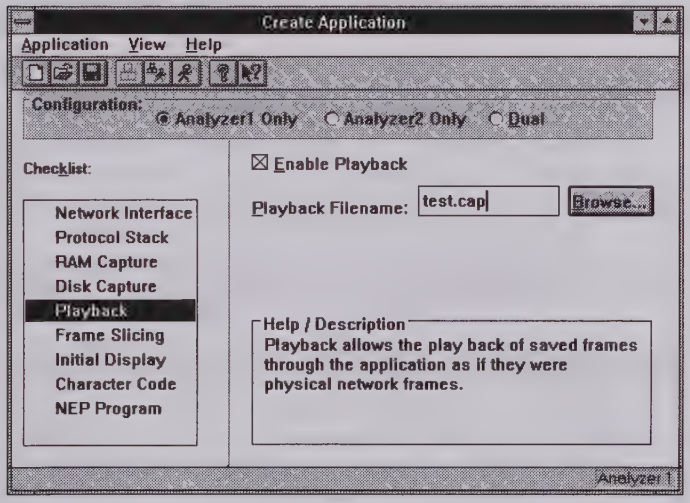


Figure 4-8 Playback Setup Screen

To play back a capture file:

1. Create a new application and specify the capture file that you want to play back.
2. Save the application.
3. Run the application.

   The Real Time screen appears along with the Playback Capture File dialog box.

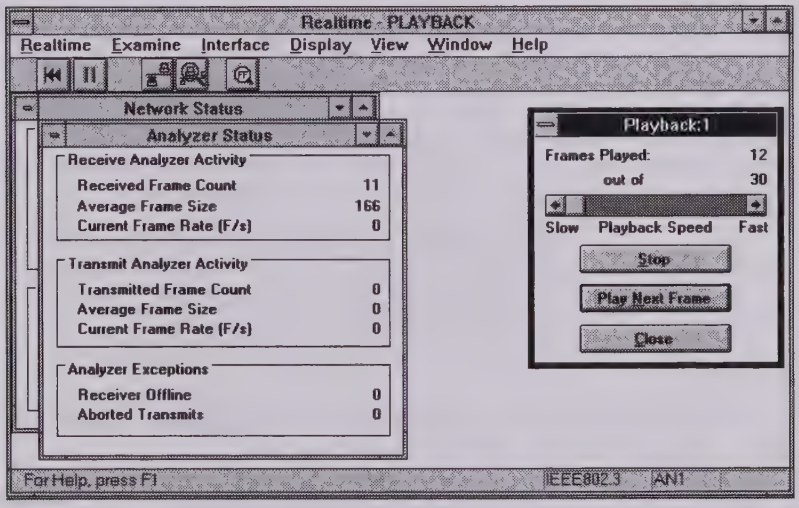


Figure 4-9 Playback Capture File Dialog Box

4. After the capture file has been played back, choose the Close button to close the Playback Capture File dialog box.

Note:

You can also use the Utilities pulldown menu from the Launch Pad to play back a capture file. Choose Analyzer 1 or Analyzer 2 from the Utilities menu and select playback from the Advanced Setup window.

4.5.1. Changing the Playback Speed

When you are using playback with the DA-3x as an emulator to perform stress or conformance testing, you may want to increase the speed of the playback. Or if you are examining the frames off-line you may want to slow the speed of the playback. The Playback Speed Control on the Playback Capture File dialog box allows you to adjust the speed at which the capture file is played back to the DA-3x.

To change the speed at which the capture file is played back:

- In the Playback Capture File dialog box, move the scroll box to the right to speed up the playback or to the left to slow down the playback of the capture file.

4.5.2. Playing Back a Capture File One Frame at a Time

You may find it useful to play back a capture file one frame at a time. This allows you to view statistics and protocol information frame-by-frame to isolate an event that has occurred on the network.

To play back one frame at a time:

1. Run the application that you have created to play back the capture file.

   The Real Time screen appears along with the Playback Capture File dialog box.

2. Use the playback speed control to adjust the playback speed to the slowest available setting.

   This enables the Play Next Frame button.

3. Choose the Play Next Frame button to play back the next frame in the capture file.

   Repeat this step each time that you want to play back another frame from the capture file.

4.5.3. Stopping the Playback of a Capture File

While playing back a capture file, you may need to stop the playback of frames. For example, if a specific frame or event that you are looking for has occurred, you may not need to see the remaining frames in the capture file.

To stop the playback of a capture file:

- In the Playback Capture File dialog box, choose the Stop button.

To resume the playback of a capture file:

- In the Playback Capture File dialog box, choose the Continue button.

4.6. Capture Menu Reference

The Capture menu is illustrated in Figure 4-10 and Table 4-1 provides the menu items and their functions.

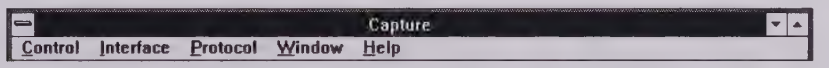


Figure 4-10 Capture Menu

Menu	Provides options for...
Control	Examining captured network traffic, restarting frame capturing, saving the contents of the current capture buffer to a new capture file, displaying or hiding the toolbar and status bar, exporting results window statistics to CSV or text files, switching the focus from one network interface to another, or exiting Capture and returning to the Launch Pad screen.
Interface	Setting up the active network interface, displaying the Hexadecimal Trace, Character Trace, or network-interface-specific results windows, selecting the character code, or resetting network statistics.
Protocol	Displaying or hiding the frame number or timestamp information, displaying or hiding fields in the Frame Summary or Protocol Summary windows, defining the colors used for displaying the frame contents, pausing or resetting the decoding of frames as they are captured from the network, modifying the protocol stack, or display the Protocol Summary windows for the protocols detected in the network traffic.
Window	Opening, closing, and arranging windows.
Help	Accessing online help and displaying version information.

Table 4-1 Capture Menu Functions

4.6.1. Control Menu

The Control menu includes the commands listed in Table 4-2.

Menu item	Function
Examine	Starts Examine and displays the Examine sreen.
Restart	Reconfigures hardware and software, resets statistics, clears the capture buffer, and restarts the capture of network traffic.
Save Capture Buffer	Saves the contents of the current capture buffer to a new capture file.
Options	Provides options for toggling the display of the Capture screen tool bar and status bar.
Save to Export File	Provides options for saving the contents of the current capture buffer to a CSV file or an ASCII text file.
1,2 command	Lists the network interface(s) on which Capture is currently running and enables you to switch between the capture buffers storing captured frames from each instrument.
Exit	Exits Capture.

Table 4-2 Control Menu Item Functions

4.6.2. Interface Menu

The Interface menu includes the commands described in Table 4-3.

Menu Item	Function
Setup	Displays the network interface setup dialog box which allows you to view and, if Examine is not active, change certain interface setup parameters.
Hex Trace or Character Trace	Displays the Hexadecimal Trace window or the Character Trace window for the network traffic you are currently monitoring.
Network Interface-Specific Commands	Display network interface-specific results windows.
Character Code	Enables you to select the data transmission character code.
Reset Statistics	Resets the counters for all network and analyzer statistics to zero.

Table 4-3 Interface Menu Item Functions

4.6.3. Protocol Menu

The Protocol menu includes the commands described in Table 4-4.

Menu Item	Function
Frame #	Toggles on or off the display of the frame number field in the Protocol Summary windows.
Absolute Time	Displays the absolute time in the current window. Absolute time is the time at which the DA-3x received the frame.
Delta Time	Displays the delta time in the current window or interframe delay. Delta time is the number of seconds elapsed between the time that the DA-3x received the previous frame and the current frame.
Setup Display	Specifies which fields are displayed in the current window
Setup Colors	Enables you to define colors in which individual protocols or protocol layers will be displayed on the Protocol Summary windows.
Protocol Stack	Displays the Protocol Stack dialog box which allows you to rearrange the protocols that are loaded on the protocol stack.
Pause Decodes	Pauses the decoding of frames as they are captured from the network.
Reset Decodes	Clears the Protocol Summary windows and pauses the decoding of frames as they are captured from the network.
Decodes	Displays the Protocol Summary windows for the protocols detected in the current capture buffer.

Table 4-4 Protocol Menu Item Functions

4.6.4. Window Menu

The Window menu includes the comments listed in Table 4-5.

Menu Item	Function
Pause	Pauses the scrolling of the current results window and allows you to view traffic that you are interested in while continuing to monitor network traffic.
Cascade	Resizes and layers all of the currently displayed results windows so that the title bar of each window is visible.
Tile Horizontally	Resizes and arranges all of the currently displayed results windows to fit on the screen, stacked from top to bottom.
Tile Vertically	Resizes and arranges all of the currently displayed results windows side by side on the screen.
Close All	Closes all of the currently displayed results windows at the same time.
Arrange Icons	Arranges all of the results window icons into rows.
1, 2, 3, 4	Displays a listing of the currently open results windows at the bottom of the Window menu.

Table 4-5 Window Menu Item Functions

4.6.5. Help Menu

The Help menu includes the comments listed in Table 4-6.

Menu Item	Function
Contents	Displays the table of contents for Help.
Using Hel	Displays information on accessing online help on the DA-3x for Windows.
About Real Time...	Displays version number and copyright information for the Real Time software.

Table 4-6 Help Menu Item Functions

5. Monitor

Monitor provides a comprehensive view of the activity on your network. It helps you to track network performance and it discovers and reports the most common network anomalies. Monitor command options enable you to view both network-level and station specific traffic analysis data.

5.1. Monitoring Network Traffic

Use Monitor to track network events and display the results in a variety of graphs and tables. Figure 5-1 illustrates two Monitor results windows.

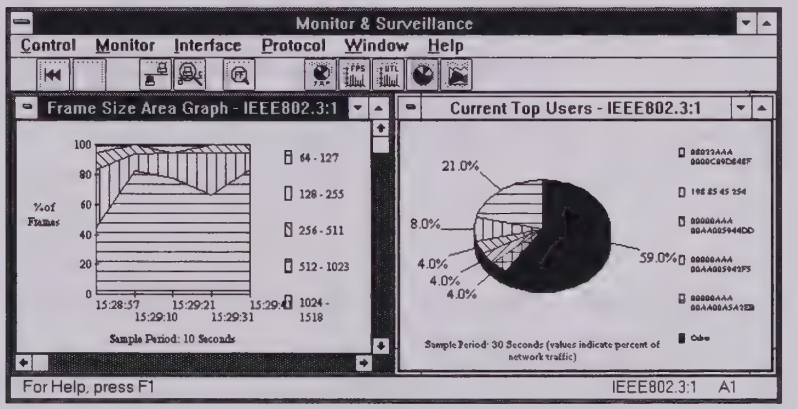


Figure 5-1 Sample Monitor Results Windows

To monitor network traffic:

1. Connect the DA-3x to the network.
2. From the Launch Pad screen, choose an installed network interface by choosing the checkbox of the Installed Interfaces section.
3. Choose the Setup button and complete the network interface setup.
4. Choose the Monitor button to run the task.

5.2. Displaying Network Utilization Statistics

The Network Utilization graph displays network utilization statistics in bar graph format. It indicates the current utilization and displays the utilization for each interval during the monitoring period in the bar graph.

You can scroll backwards or forwards through the stored statistics. The period for which statistics are stored varies depending on whether the interval is set to seconds, minutes, or hours.

Statistics are stored for..	when you're viewing statistics...
15 minutes	per second
16 hours	per minute
4 days	per hour

See Section 5.14. "Scrolling Through Graphs" for information on how to scroll through the graph using the keyboard or the mouse. See Section 5.2.3. "Changing the Time Scale of Graphs" for information on how to change the time interval used for displaying the graph.

5.2.1. Displaying the Network Utilization Graph

To display the Network Utilization graph:

- From the Monitor menu, choose Network and then Utilization Graph.

  The Network Utilization graph (Figure 5-2) appears.

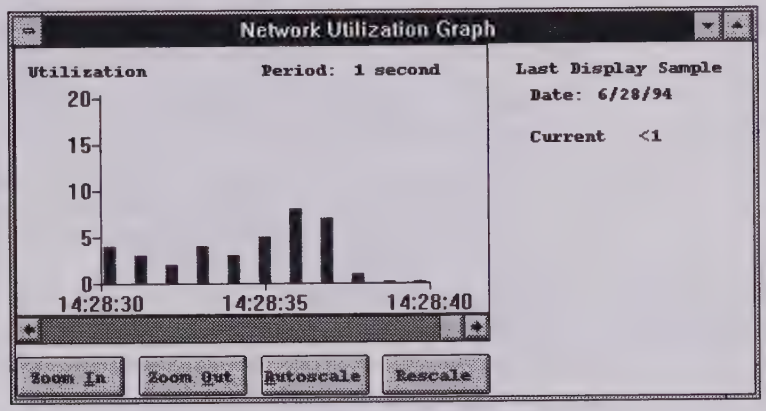


Figure 5-2 Network Utilization Graph

Shortcut:

Use the Network Utilization button on the Monitor Toolbar.

5.2.2. Changing the Network Utilization Scale

The network utilization in the Network Utilization graph (Figure 5-2) is displayed as a percentage. Monitor automatically adjusts the scale of the graph to fit the largest network utilization value that has been recorded during the monitoring period. However, if there are peaks of unusually high network utilization, this scale may be inappropriate for viewing the rest of the network utilization statistics. Monitor allows you to scale the graph based on the period that you are currently viewing.

To change the network utilization scale to fit the displayed period:

- Choose the Rescale button.

  The network utilization scale adjusts to fit the network utilization statistics that are currently displayed in the Network Utilization graph.

To autoscale the network utilization scale:

- Choose the Autoscale button.

The network utilization scale adjusts to match the scope of all of the network utilization statistics gathered during the monitoring period.

5.2.3. Changing the Time Scale of the Network Utilization Graph

The information in the Network Utilization graph (Figure 5-2) is displayed in intervals, either 1 second, 1 minute, or 1 hour increments, over the entire monitoring period. Monitor allows you to select the interval used for displaying the graph.

To increase the time scale of the graphs:

- Choose the Zoom Out button.

  The scale increases from seconds to minutes or from minutes to hours. If the current interval is hours, then the scale does not change.

To decrease the time scale of the graphs:

- Choose the Zoom In button.

  The scale decreases from hours to minutes or minutes to seconds. If the current interval is seconds, then the scale does not change.

5.3. Displaying Protocol Distribution Statistics

The Protocol Distribution window and pie chart allow you to view a list of the current protocols, the percentage of the total traffic that contains each of the detected protocols and a pie chart of these percentages. Both current and session statistics are available.

5.3.1. Displaying the Protocol Distribution Window

The Protocol Distribution window displays a list of the protocols currently detected in the network traffic and shows the percentage of the total traffic that contains each of the detected protocols.

To display the Protocol Distribution window:

1. From the Monitor menu, choose Network.
2. Choose Protocol Distribution.
3. Choose Current or Session.

   The appropriate Protocol Distribution window (Figure 5-3) appears.

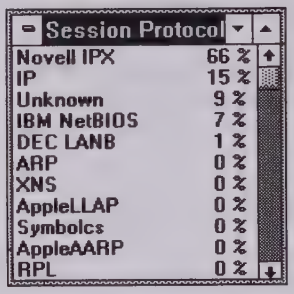


Figure 5-3 Session Protocol Distribution Window

5.3.2. Displaying the Protocol Distribution Pie Chart

The Protocol Distribution pie chart displays protocol distribution statistics in pie chart format. This pie chart indicates the percentage of the total network traffic that contains each of the protocols detected on the network.

To display the Protocol Distribution pie chart:

1. From the Monitor menu, choose Network.
2. Choose Protocol Pie Chart.
3. Choose Current or Session.

   The appropriate Protocol Distribution pie chart (Figure 5-4) appears.

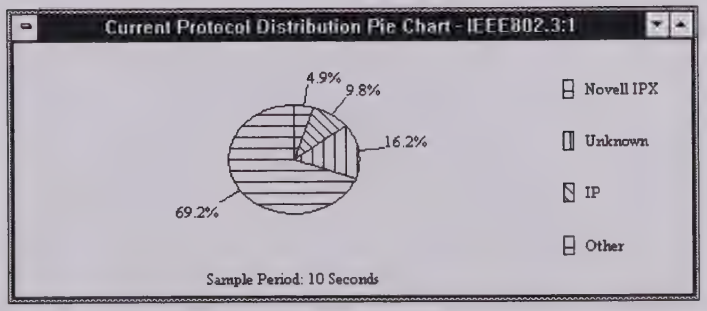


Figure 5-4 Protocol Distribution Pie Chart

Shortcut:

Use the Protocol Distribution button on the Monitor Toolbar for the current pie chart.

5.4. Displaying Frame Size Distribution Statistics

The Frame Size Distribution window and area graph allow you to view a list of frame size ranges, their percentage of the total frames, and the statistics in area graph format.

5.4.1. Displaying the Frame Size Distribution Window

The Frame Size Distribution window displays a list of frame size ranges appropriate for the type of network being monitored. It also indicates the percentage of the total frames that fall within each frame size range.

To display the Frame Size Distribution window:

- From the Monitor menu, choose Network and then Frame Size Distribution.

  The Frame Size Distribution window (Figure 5-5) appears.

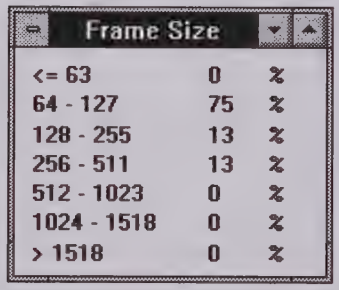


Figure 5-5 Frame Size Distribution Window

5.4.2. Displaying the Frame Size Distribution Area Graph

The Frame Size Distribution area graph displays frame rate statistics in area graph format. This area graph indicates the percentage of the total frames that fall within specific frame size ranges.

To display the Frame Size Distribution area graph:

- From the Monitor menu, choose Network and then Frame Size Area Graph.

  The Frame Size area graph (Figure 5-6) appears.

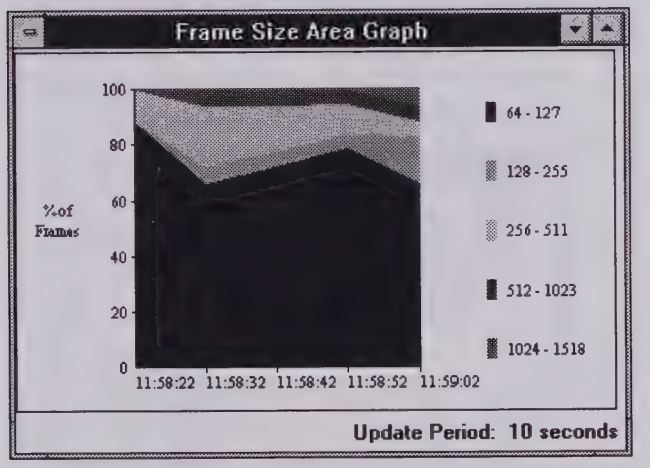


Figure 5-6 Frame Size Distribution Area Graph

Shortcut:

Use the Frame Size button on the Monitor Toolbar.

5.5. Displaying the Ring Map

Ring Map is a feature of the Token Ring interface. The Ring Map window displays a listing of the MAC addresses for all of the active nodes on the ring in ring map order. The addresses are displayed as 6 byte hexadecimal addresses in MSB-first format.

Note:

For FDDI, a Ring Map window is available from the Real Time Interface menu or the Examine Display menu.

To display the Ring Map:

- From the Monitor menu, choose Network and then Ring Map.

  The Ring Map window (Figure 5-7) appears.

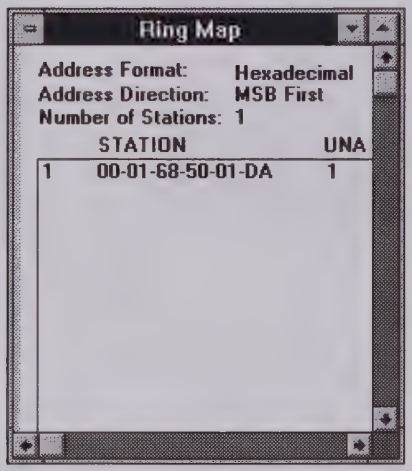


Figure 5-7 Ring Map Window

Shortcut:

Use the Ring Map button on the Monitor Toolbar.

5.6. Displaying Network Error Statistics

The Errors window displays error statistics that are specific to the type of network that you are monitoring.

To display the Errors window:

- From the Monitor menu, choose Network and then Errors.

  The Errors window (Figure 5-8) appears.

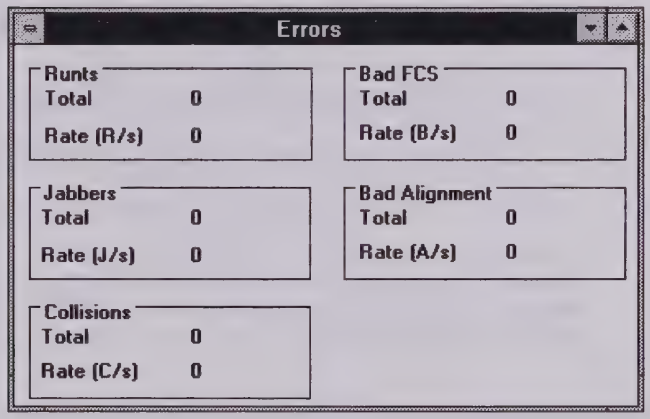


Figure 5-8 Errors Window

Shortcut:

Use the Network Errors button on the Monitor Toolbar.

Note:

The Errors window is only available for the Ethernet and WAN network interfaces. Token Ring and FDDI errors are displayed in network interface-specific results windows available from the Real Time Interface menu or the Examine Display menu.

5.7. Displaying Frame Rate Statistics

The Frame Rate graph displays frame rate statistics in bar graph format. It indicates the current frame rate and displays the frame rate for each interval during the monitoring period in the bar graph.

You can scroll backwards or forwards through the stored statistics. The period for which statistics are stored varies depending on whether the interval is set to seconds, minutes, or hours.

Statistics are stored for..	when you're viewing statistics...
15 minutes	per second
16 hours	per minute
4 days	per hour

See Section 5.14., "Scrolling Through Graphs" for information on how to scroll through the graph using the keyboard or the mouse. See Section 5.7.3., "Changing the Time Scale of Graphs" for information on how to change the time interval used for displaying the graph.

5.7.1. Displaying the Frame Rate Graph

The Frame Rate graph displays frame rate statistics in bar graph format. It indicates the current frame rate and displays the frame rate for each interval during the monitoring period in the bar graph.

To display the Frame Rate graph:

- From the Monitor menu, choose Network and then Frame Rate Graph.

The Network Frame Rate graph (Figure 5-9) appears.

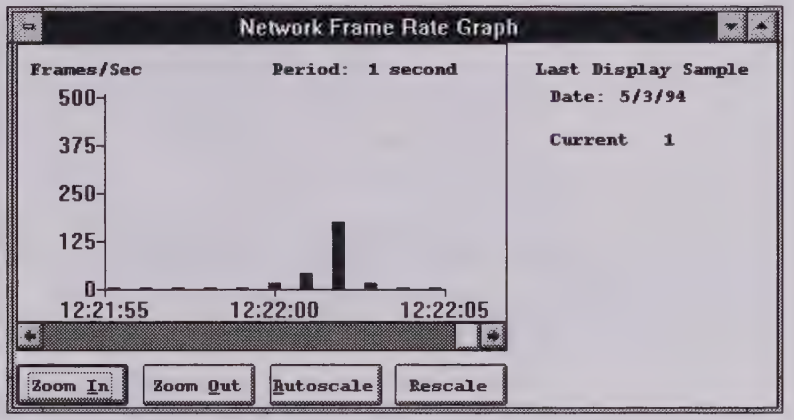


Figure 5-9 Network Frame Rate Graph

Shortcut:
Use the Frame Rate button on the Monitor Toolbar.

5.7.2. Changing the Frame Rate Scale of the Frame Rate Graph

The frame rate in the Frame Rate graph (Figure 5-9) is displayed in frames per second. Monitor automatically adjusts the scale of the graph to fit the largest frame rate value that has occurred during the monitoring period. However, if there are peaks of unusually high traffic rates, this scale may be inappropriate for viewing the rest of the frame rate statistics. Monitor allows you to scale the graph based on the period that you are currently viewing.

To change the frame rate scale to fit the displayed period:

- Choose the Rescale button.

  The frame rate scale adjusts to fit the frame rate statistics that are currently displayed in the Frame Rate graph.

To autoscale the frame rate scale:

- Choose the Autoscale button.

  The frame rate scale adjusts to match the scope of all of the frame rate statistics gathered during the monitoring period.

5.7.3. Changing the Time Scale of the Frame Rate Graph

The information in the Frame Rate graph (Figure 5-9) is displayed in intervals, either 1 second, 1 minute, or 1 hour increments, over the entire monitoring period. Monitor allows you to select the interval used for displaying the graph.

To increase the time scale of the graphs:

- Choose the Zoom Out button.

  The scale increases from seconds to minutes or from minutes to hours. If the current interval is hours, then the scale does not change.

To decrease the time scale of the graphs:

- Choose the Zoom In button.

  The scale decreases from hours to minutes or minutes to seconds. If the current interval is seconds, then the scale does not change.

5.8. Selecting the LAN Encapsulation Method

When you monitor WAN traffic, you must specify the method used for encapsulating LAN traffic to enable the DA-3x to properly decode the received frames.

To select the LAN encapsulation method:

1. From the Monitor menu, choose Setup LAN Encapsulation.

   The WAN Monitor Setup dialog box (Figure 5-10) appears.

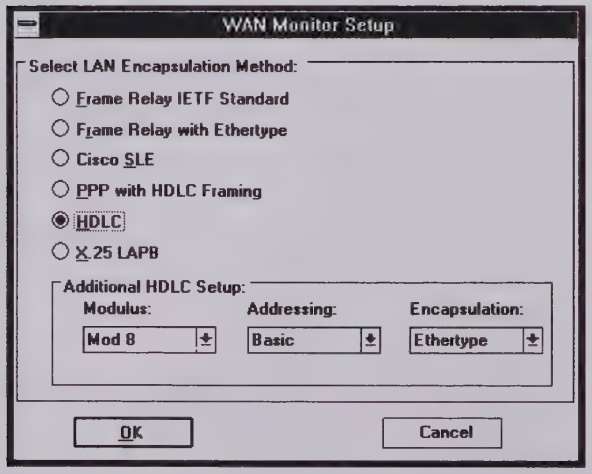


Figure 5-10 WAN Monitor Setup dialog box

2. Choose one of the following LAN encapsulation methods:
   - Frame Relay IETF Standard
   - Frame Relay with Ethertype
   - Cisco SLE
   - PPP with HDLC Framing
   - HDLC
   - X.25 LAPB

   If you selected the HDLC encapsulation, you must also specify the mode of operation (modulus), type of addressing, and encapsulation method used by HDLC. If you selected X.25 LAPB, you must also specify modulus, link type and encapsulation.
3. Choose the OK button.

   Your selections are accepted and you return to the Monitor screen.

5.9. Displaying Station-Specific Statistics

Monitor provides the options for obtaining statistics for individual stations on your network.

To display the station-specific statistics:

1. From the Monitor menu, choose Station.
2. From the Station sub-menu, choose one of the available options for viewing station-level statistics:

Display Station List	Lists the top network users identified by address with the following statistics for each user: • Total Number of Frames • Average Frame Size • Minimum Frame Size • Maximum Frame Size • Percent of Network Utilization
Sort by Lineside	Sorts the station list according to whether the station is transmitting from the DTE or DCE side of the line.
Sort by Usage	Sorts the station list by percentage of network use, in descending order.

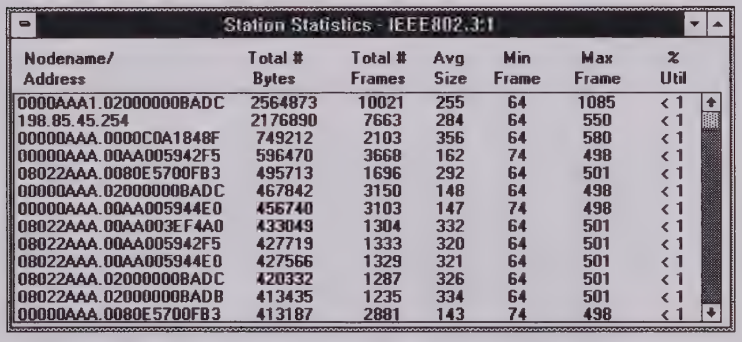
Top Users	Displays a pie chart showing the top network users and the percentage of network traffic associated with each, for one of the following time periods: • current (the last 30-second interval) • session (since monitoring started or statistics were reset)

Note:

Station-specific statistics are not available for the FDDI network interface.

5.9.1. Displaying the Station Statistics Window

Use the Display Station List command to display the Station Statistics window (Figure 5-11), which provides statistical information for the top users on the network.



Nodename/ Address	Total # Bytes	Total # Frames	Avg Size	Min Frame	Max Frame	% Util
0000AAA1.02000000BADC	2564873	10021	255	64	1085	< 1
198.85.45.254	2176890	7663	284	64	550	< 1
00000AAA.0000C0A1848F	749212	2103	356	64	580	< 1
00000AAA.00AA005942F5	596470	3668	162	74	498	< 1
08022AAA.0080E5700FB3	495713	1696	292	64	501	< 1
00000AAA.02000000BADC	467842	3150	148	64	498	< 1
00000AAA.00AA005944E0	456740	3103	147	74	498	< 1
08022AAA.00AA003EF4A0	433049	1304	332	64	501	< 1
08022AAA.00AA005942F5	427719	1333	320	64	501	< 1
08022AAA.00AA005944E0	427566	1329	321	64	501	< 1
08022AAA.02000000BADC	420332	1287	326	64	501	< 1
08022AAA.02000000BADB	413435	1235	334	64	501	< 1
00000AAA.0080E5700FB3	413187	2881	143	74	498	< 1

Figure 5-11 Station Statistics Window

To display the Station Statistics window:

1. From the Monitor menu, choose Station.
2. From the Station sub-menu, choose Display Station List.

   The statistics provided are: total byte count, total frame count, average frame size, minimum and maximum frame size and utilization percentage:

5.9.2. Sorting the Station List by Lineside

While viewing the Station Statistics window, you can use the Station Sort by Line-side command to sort the station list according to whether the station is transmitting from the DTE or DCE side of the line.

To sort the station list by lineside:

1. From the Monitor menu, choose Station.
2. From the Station sub-menu, choose Sort by Lineside.

   The list of stations is sorted in descending order based on DTE or DCE transmission.

5.9.3. Sorting the Station List by Usage

While viewing the Station Statistics window, you can use the Station Sort by Usage command to sort the station list by total number of bytes transmitted by station in descending order.

To sort the station list by usage:

1. From the Monitor menu, choose Station.
2. From the Station sub-menu, choose Sort by Usage.

   The list of stations is sorted in descending order based on the total number of bytes transmitted by station.

5.9.4. Displaying the Session Top Users Pie Chart

Use the Session Top Users command to display the Session Top Users pie chart which shows the cumulative percentages of network traffic generated by the top users since you started monitoring the line.

To display the Session Top Users pie chart:

1. From the Monitor menu, choose Station.
2. From the Station sub-menu, choose Top Users.
3. Choose Session.

   The Session Top Users pie chart is displayed.

5.9.5. Displaying the Current Top Users Pie Chart

The Current Top Users pie chart shows the percentages of network traffic generated by the top network users for a 30 second sampling period. The chart legend provides the network address associated with each chart segment.

To display the Current Top Users pie chart:

- From the Monitor menu, choose Station Current Top Users command.

The Current Top Users pie chart is displayed.

Shortcut:

Use the Current Top Users button on the Monitor Toolbar.

5.10. Displaying the Throughput Efficiency Graph

The Throughput Efficiency graph shows the current or session percentages of data line usage for user data and overhead. The current statistics reflect network use for a 30-second sampling period. The session statistics reflect cumulative line use since you began monitoring the network.

To display the Throughput Efficiency graph:

1. From the Monitor menu, choose Network.
2. Choose WAN Throughput Efficiency Graph.
3. Choose Current or Session

   The Current or Session Throughput Efficiency graph (Figure 5-12) is displayed.

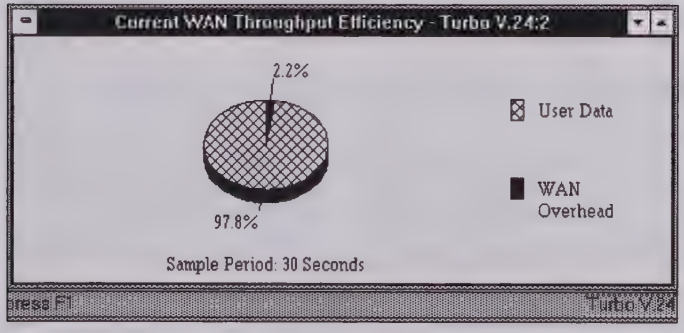


Figure 5-12 Sample Throughput Efficiency Graph

5.11. Switching Between Analyzers

Monitoring network traffic from two points on the same network or monitoring two different networks at the same time requires using two analyzers and two network interfaces. Monitor only allows you to view information about one analyzer at a time, but you can easily switch between the two analyzers.

To switch analyzers:

- Choose the analyzer from the Interface menu, indicated by the network interface, that you want to make active.

If you have results windows from two network interfaces on the screen, you can switch between analyzers by choosing the window that is associated with the analyzer to which you wish to switch. A highlighted title bar indicates the window that has the current focus.

5.12. Modifying the Network Interface Setup

Use the Setup command on the Interface menu to change the setup for the network interface. The options that you can change vary depending on the network interface.

To modify the network interface setup:

- Choose Setup from the Interface menu.

  The appropriate network interface setup dialog box (Figure 5-13) is displayed.

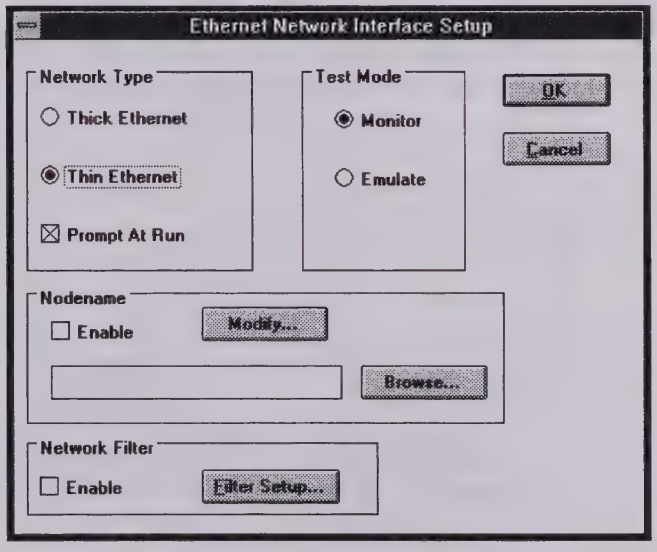


Figure 5-13 Sample Network Interface Setup Dialog Box

For network-interface setup information, refer to the on-line help for the desired network interface.

5.13. Modifying the Protocol Stack

While monitoring network traffic, you can use the Protocol Stack command on the Protocol menu to rearrange the protocols that are loaded on the protocol stack. You can also remove protocols that are loaded, replace loaded protocols, or load additional protocols, as needed.

When modifying the protocol stack, you can load protocols on the protocol stack at their default layer or at any layer that you choose. This is controlled by the Custom Stack feature. When this feature is disabled, you can only load protocols at their default layer. When this feature is enabled, you can load any protocol at any layer.

To modify the protocol stack:

1. Choose Protocol Stack from the Protocol menu.

   The Modify Protocol Stack dialog box (Figure 5-14) appears.

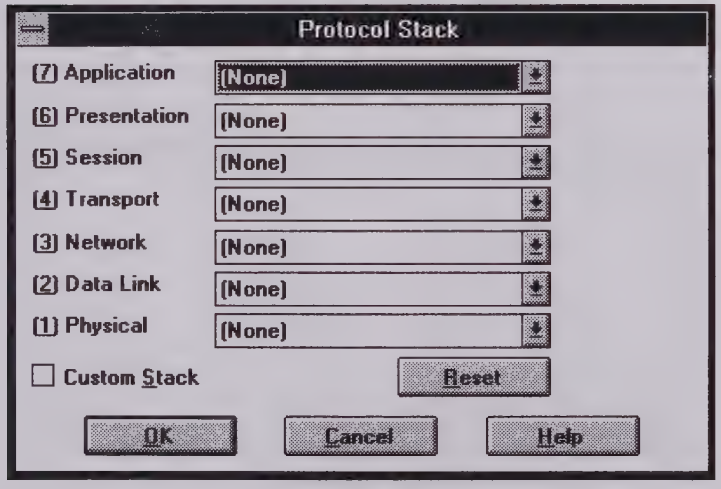


Figure 5-14 Modify Protocol Stack Dialog Box

2. Move the cursor to the layer where you want to remove, replace, or add a protocol.
3. Use the Up Arrow or Down Arrow to scroll through the list of available protocols.
4. Do one of the following
   - To remove a protocol, select the None option.
   - To replace a protocol, select the protocol that you want to load.
   - To add a protocol, select the protocol that you want to load.
5. Choose the OK button to re-analyze the capture network traffic based on your changes to the protocol stack and then return to the Monitor screen.

Note:

For the DA-3x to be able to decode a protocol, the software for that protocol must be installed and the protocol must be identifiable by the protocol at the preceding layer. A protocol that cannot be identified by the preceding protocol can be decoded only if you load that protocol and the one that precedes it at the appropriate layers on the protocol stack.

When analyzing WAN traffic, you must load the first protocol on the protocol stack, for example, Frame Relay, HDLC, or SDLC. Also, because WAN protocols typically lack the ability to detect the next layer protocol, it is advisable to load the upper layer protocols that you want to decode on the stack as well. The physical layer is automatically set to the interface you selected on the previous screen (e.g., V.24).

Note:

If you modify the protocol stack while running Monitor, Capture, or an application, the summary windows only retain the currently displayed information. However, all of the captured network traffic and protocol decodes are still available if you switch to Examine to review the network traffic that is being captured and stored in the RAM capture buffer.

5.14. Saving Statistics to an Export File

The Control menu provides options that enable you to save the contents of the current Monitor result window to either a CSV file or a text file for export to spreadsheet or word processing applications.

To save statistics to an export file:

1. From the Control menu, choose Save to Export File, then choose either Export to CSV or Export to Text.

   The Save Export File dialog box (Figure 5-15) is displayed.

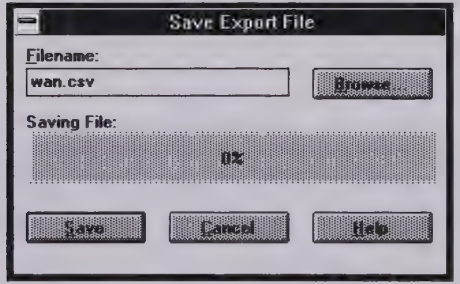


Figure 5-15 Save Export File Dialog Box

2. Enter the name of the file in which you want to store the content of the results window and choose the OK button.

The data in the current result window is stored in the file you specified with either the extension .TXT or .CSV, depending on the type of export file you selected. You return to the real time application screen.

5.15. Exiting Monitor

You can use the Exit command on the Control menu to exit Monitor and return to the Launch Pad screen.

To exit Monitor:

- From the Control menu, choose Exit.

  You exit Monitor and return to the Launch Pad screen.

5.16. Restarting Monitor

If you have been monitoring network traffic and want to change the network interface, the setup, or start the statistics over, the Restart command on the Control menu allows you to restart the monitoring of traffic on the network and reset all of the network statistics.

To restart Monitor:

- Choose Restart from the Control menu.

  The DA-3x restarts Monitor, prompts you to verify the network interface setup (if the prompt at Run option is enabled), resets all of the network statistics, and begins monitoring network traffic again.

Shortcut:

Use the Restart button on the Monitor Toolbar.

5.17. Pausing Monitor

The Pause command on the Window menu allows you to pause the updating of the current results window and view traffic that you are interested in while continuing to monitor subsequent network traffic. When you are finished viewing the traffic, choose the Pause command again to resume the display of traffic.

Shortcut:

Use the Pause button on the Monitor Toolbar.

5.18. Examining Captured Network Traffic

Monitor provides you with access to results statistics that are pertinent to the network you are monitoring, as well as to Protocol Summary windows that allow you to review protocol-specific information about the network traffic that has been stored in the capture buffer.

You can also switch to Examine from Monitor to review the network traffic that is being captured and stored in a RAM capture buffer while Monitor is running.

To examine captured network traffic:

- From the Control menu, choose the Examine command.

  A dialog box is displayed which notes that switching to Examine will cause a gap in the RAM buffer, and asks you to confirm that you want to start Examine. If you are running Monitor on multiple analyzers, this dialog box includes check boxes for each connected analyzer, so that you can specify which interface's traffic you want to examine. When you choose the OK button on this dialog box, the Examine screen is displayed.

Note:

When you access the Examine screen from Monitor, the DA-3x continues to monitor network traffic and store captured network traffic in the capture buffer until the capture buffer on the analyzer is full. However, the network traffic will not wrap to the beginning of the buffer while you are in Examine.

5.19. Scrolling Through Graphs

The Network Utilization graph (Figure 5-2) and Frame Rate graph (Figure 5-9) contain a scroll bar at the bottom which allows you to scroll through the graph to view information for different times during the monitoring period. You can scroll through the information using the keyboard or a mouse.

To scroll through the graphs using the keyboard:

Key	Action
Left Arrow	Scrolls backward one interval at a time.
Right Arrow	Scrolls forward one interval at a time.
Pg Up	Scrolls backward 11 intervals at a time.
Pg Dn	Scrolls forward 11 intervals at a time.
Ctrl-Home	Scrolls to the beginning of the monitoring period.
Ctrl End	Scrolls to the end of the monitoring period.

To scroll through the graphs using the mouse:

Key	Action
Left Scroll Arrow	Click on it to scroll backward one interval at a time.
Right Scroll Arrow	Click on it to scroll forward one interval at a time.
Scroll Box	Drag it left or right in the scroll bar to move forward or backward through the graph.
Scroll Bar	Click to the left or right of the scroll box to move forward or backward one screen at a time.

5.20. Monitor Menu Reference

The Monitor menu bar is illustrated in Figure 5-16 and Table 5-1 provides the menu items and their functions.

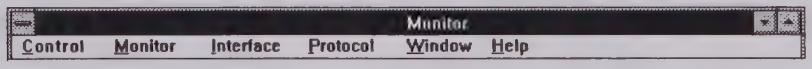


Figure 5-16 Monitor Menu Bar

Menu	Provides options for...
Control	Switching to Examine, restarting real time analysis, saving the Capture buffer, changing the Monitor screen view options, saving information to export files, selecting the current analyzer, and exiting Monitor.
Monitor	Monitoring network or station traffic and displaying network or station statistics in tabular and graphical formats.
Interface	Setting up the active network interface and displaying results windows including network- interface-specific status windows and the Hexadecimal and Character Trace windows.
Protocol	Setting up the display of information on the Protocol Summary and Hexadecimal Trace windows, changing the protocol stack, and displaying Protocol Summary windows.
Window	Selecting, pausing, closing, and arranging results windows.
Help	Accessing on-line help and displaying version information.

Table 5-1 Monitor Menu Functions

5.20.1. Control Menu

The Control menu includes the commands listed in Table 5-2.

Menu item	Function
Examine	Starts Examine and displays the Examine screen.
Restart	Reconfigures the hardware and software, resets statistics, clears the capture buffer, and restarts monitoring of network traffic.
Save Capture Buffer	Saves the contents of the current temporary capture buffer to a permanent capture file.
Options	Provides options for toggling the display of the Monitor screen tool bar and status bar.
Save to Export File	Provides options for saving the data associated with the active Monitor window to a CSV file or an ASCII text file.
1,2 <interface type>	Contains a numbered switch command to enable shifting between displays of information for each network interface.
Exit	Exits Monitor.

Table 5-2 Control Menu Item Functions

5.20.2. Monitor Menu

The commands on the Monitor menu vary depending on the interface being used. Table 5-3 describes the Monitor menu items and their functions.

Menu Item	Function
Network Frame Rate Graph	Displays the Frame Rate graph with frame rate statistics in bar graph format, indicates the current frame rate, and displays the frame rate for each interval during the monitoring period in the bar graph.
Network Protocol Distribution	Displays the Protocol Distribution window with a list of either the session or currently detected protocols in the network traffic and indicates the percentage of the total traffic that contains each of the detected protocols.
Network Protocol Pie Chart	Displays the Protocol Distribution pie chart with protocol distribution statistics in pie chart format and indicates either the session or current percentage of the total network traffic that contains each of the protocols detected on the network.
Network Frame Size Distribution	Displays the Frame Size Distribution window with a list of frame size ranges appropriate for the type of network being monitored and indicates the percentage of the total frames that fall within each frame size range.
Network Frame Size Area Graph	Displays the Frame Size Distribution area graph with frame rate statistics in area graph format and indicates the percentage of the total frames that fall within specific frame size ranges.
Ring Map	Displays a listing of the MAC addresses for all of the active nodes on the ring in ring map order.
Station Display Station List	Displays the Station Statistics window, which provides information for all stations detected on the network. The statistics provided are: total byte count, total frame count, average frame size, minimum and maximum frame size and utilization percentage.
Station Sort by Lineside	Sorts the station list according to whether the station is transmitting from the DTE or DCE side of the line.
Station Sort by Usage	Sorts the station list by total number of bytes transmitted by station in descending order.

Table 5-3 Sample Monitor Menu Item Functions

Menu Item	Function
Station Current or Session Top Users	Displays the Current Top User pie chart which shows the percentages of network traffic for top users for a 30 second sampling period or the Session Top Users pie chart which shows the cumulative percentages of network traffic generated by the top users since you started monitoring the network.
Setup LAN Encapsulation (WAN only)	Displays the WAN Monitor Setup dialog box where you can specify the method used for encapsulating LAN traffic on the network that you are monitoring.

Table 5-3 Sample Monitor Menu Item Functions (Continued)

5.20.3. Interface Menu

The Interface menu includes the commands described in Table 5-4.

Menu Item	Function
Setup	Displays the network interface setup dialog box which allows you to view and, if Examine is not active, change certain interface setup parameters.
Hex Trace	Displays the Hexadecimal Trace window containing character and hex dumps of sampled frames from the network traffic you are currently monitoring.
Character Trace	Displays the Character Trace window containing the contents of each frame in character code format for the network traffic you are currently monitoring.
Network-Interface-Specific Commands	Display network-interface-specific results windows and sampled frames from the network.
Character Code	Allows you to change the character code used to display results. Affects the Hex Trace window display.
Reset Statistics	Resets the counters for all network and analyzer statistics to zero. All statistics displayed in the results windows and the Monitor graphs, pie charts, and lists are reset.

Table 5-4 Interface Menu Item Functions

5.20.4. Protocol Menu

The Protocol menu includes the commands described in Table 5-5.

Menu Item	Function
Frame #	Toggles on or off the display of the frame number field in the Protocol Summary windows.
Absolute Time	Displays the absolute time in the current window. Absolute time is the time at which the DA-3x received the frame.
Delta Time	Displays the delta time or interframe delay in the current window. Delta time is the number of seconds elapsed between the time that the DA-3x received the previous frame in the window and the current frame.
Setup Display	Specifies which fields are displayed in the current window.
Setup Colors	Enables you to define colors in which individual protocols or protocol layers will be displayed on the Protocol Summary, Frame Summary, and Protocol Detail windows.
Protocol Stack	Displays the Protocol Stack dialog box which allows you to rearrange the protocols that are loaded on the protocol stack.
Pause Decodes	Pauses the decoding of frames as they are captured from the network.
Reset Decodes	Clears the Protocol Summary windows and pauses the decoding of frames as they are captured from the network.
Decodes	Displays the Protocol Summary windows for the protocols detected in the current capture buffer or assigned in the Protocol Stack.

Table 5-5 Protocol Menu Item Functions

5.20.5. Window Menu

The Window menu includes the commands described in Table 5-6.

Menu Item	Function
Pause	Pauses the scrolling of the current results window and allows you to view traffic that you are interested in while continuing to monitor network traffic.
Cascade	Resizes and layers all of the currently displayed results windows so that the title bar of each window is visible.
Tile Horizontally	Resizes and arranges all of the currently displayed results windows to fit on the screen, stacked from top to bottom.
Tile Vertically	Resizes and arranges all of the currently displayed results windows side by side on the screen.
Close All	Closes all of the currently displayed results windows at the same time.
Arrange Icons	Arranges all of the results window icons into rows.

Table 5-6 Window Menu Item Functions

5.20.6. Help Menu

The Help menu includes the commands described in Table 5-7.

Menu Item	Function
Contents	Displays the main contents screen for Help.
Using Help	Displays information on accessing on-line help on the DA-3x for Windows.
About Real Time	Displays copyright information for the Real Time software.

Table 5-7 Help Menu Item Functions

6. Examine

Examine is the Da-3x for Windows feature that enables you to review and analyze network traffic. Examine uses RAM capture buffers to provide options for both real-time and post-capture examination of network traffic. When Monitor or an application is running, the DA-3x captures network traffic and stores it in a temporary buffer. You can start Examine during real time operation and review the contents of that buffer, which can be continuously updated with newly captured data. To provide for post-capture examination of network traffic, the contents of a RAM capture buffer can be saved to a file. You can then use Examine to load the file into a temporary buffer and review the data.

With few exceptions, Examine works the same whether you're examining "live" buffered data during real-time or captured data from a file. This chapter describes how to use Examine, including:

- examining captured traffic
- saving captured frames to a file
- working with captured files
- displaying frame information in a variety of results windows
- searching for specific frames
- filtering captured frames
- printing the frame contents

Figure 6-1 illustrates the Examine screen. For information on the Examine screen menu names, refer to the Menu Reference section at the end of this chapter.

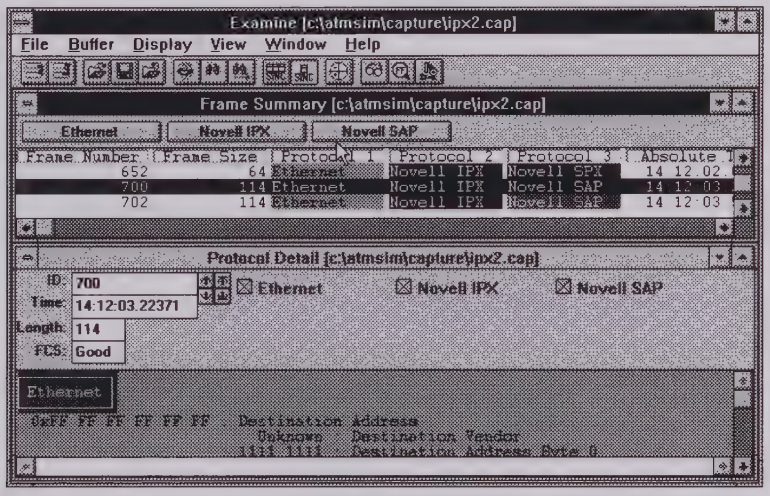

Examine [c:\atmsim\capture\ipx2.cap]
File Buffer Display View Window Help
Frame Summary [c:\atmsim\capture\ipx2.cap]
Ethernet
Novell IPX
Novell SAP
Frame Number | Frame Size | Protocol 1 | Protocol 2 | Protocol 3 | Absolute
652 64 Ethernet Novell IPX Novell SPX 14 12.02
700 114 Ethernet Novell IPX Novell SAP 14 12 03
702 114 Ethernet Novell IPX Novell SAP 14 12 03
Protocol Detail [c:\atmsim\capture\ipx2.cap]
ID: 700
Time: 14:12:03.22371
Length: 114
FCS: Good
Ethernet
Novell IPX
Novell SAP
Ethernet
0xFF FF FF FF FF FF Destination Address
Unknown Destination Vendor
1111 1111 Destination Address Byte 0

Figure 6-1 Examine Screen

6.1. Working with Captured Data

The Examine screen allows you to view network interface status, frame summary, protocol summary, and protocol detail information for the captured frames.

You can examine captured network traffic in real time or you can open a capture file and load its contents into the temporary buffer. These windows are described in Section 6.2. "Displaying Frame Information".

From Examine, you can perform the following actions on Capture files:

- open Windows-based and character-based capture files
- close the current or all open capture files
- save captured frames to a new capture file
- copy capture files
- delete capture files
- export captured frames to a CSV file

6.1.1. Capture Files vs. Capture Buffers

The DA-3x stores network traffic in:

- capture buffers
- capture files

A capture buffer is an area in RAM where the DA-3x temporarily stores captured network traffic or a capture file that you want to examine. A capture file is a copy of the data in a capture buffer that is saved to disk for later use.

Table 6-1 summarizes the use of capture buffers and capture files.

Type of Capture Storage	Functions
Capture buffer	• Store captured frames as they are captured from the network. • Allow you to filter, search, and save to file the captured frames contained in the buffer. • Store the contents of each capture file that you open, one buffer for each file. • Allow you to open more than one capture file at a time, and switch from one buffer to another.
Capture file	• Store captured network traffic permanently on disk. • Allow you to save captured frames for re-analysis. • Can be played back onto the network to duplicate network test conditions.

Table 6-1 Capture Buffers and Files

6.1.2. Opening an Existing Capture File

You can open an existing capture file from the Examine screen's File menu and view the following information on the captured frames:

- network interface-specific statistics
- frame summary information
- protocol summary information
- protocol details

To open an existing capture file:

1. Choose Open from the File menu.

   The Open Capture File dialog box (Figure 6-2) appears.

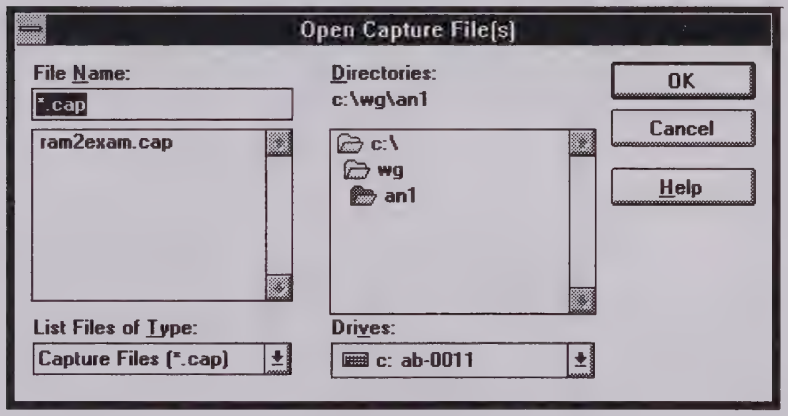


Figure 6-2 Open Capture File Dialog Box

2. Select or type the name of the capture file that you want to open in the File Name box.

   If the capture file that you want to open is not listed in the File Name box, do one or more of the following:

   - select a different directory in the Directories box
   - select a different drive in the Drives box
   - select the appropriate file type in the List Files of Type box

3. Choose the OK button.

   The frames are loaded into the temporary buffer and the Frame Summary window appears.

Shortcut:

Use the Open button on the Examine Toolbar.

Note:

If you select Examine from the Launch Pad, the Open Capture File dialog box is automatically displayed.

6.1.3. Opening Character-Based Capture Files

If you have capture files that were created on the DA-3x with the character-base software, you can convert those files from the character-based format to the format used by the DA-3x for Windows software. The DA-3x automatically performs the conversion process when you open a character-based capture file.

To open a character-based capture file:

1. Choose Open from the File menu.

   The Open Capture File dialog box (Figure 6-2) appears.

2. Select All Files as the type of file to open in the List Files of Type box.

   All of the files in the current directory are listed in the Filename box.

3. Select the directory in the Directories box where the character-based capture file that you want to open is stored.

   All of the files in the selected directory are listed in the Filename box.

4. Select the name of the character-based capture file in the Filename box.

5. Choose the OK button.

   The Convert Capture File confirmation box appears.

6. Choose the Yes button to convert the format of the character-based capture file.

   The Save Converted Capture File dialog box (Figure 6-3) appears.

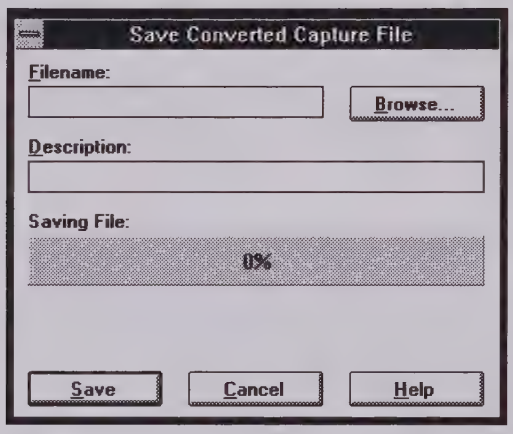


Figure 6-3 Save Converted Capture File Dialog Box

7. Type a filename to use for the converted capture file in the Filename box.
8. Choose the Browse button to save the file to a different drive or directory.

   The Select Capture Filename dialog box (Figure 6-4) appears allowing you to specify the drive, directory, or file type for the converted capture file.

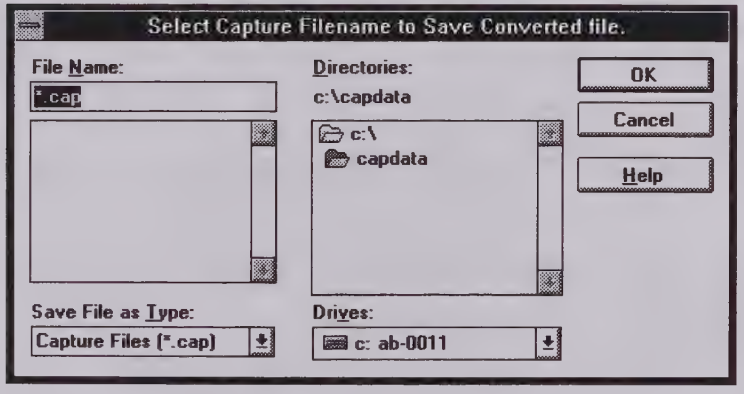


Figure 6-4 Select Capture Filename Dialog Box

9. Choose the OK button to return to the Save Converted Capture File dialog box.
10. Type a brief description for the converted capture file in the Description box. The description can be up to 40 characters in length and can contain spaces and punctuation.

11. Choose the Save button.

    Examine converts the capture file and then loads the contents into a capture buffer. The percent done bar indicates the progress of the conversion. After Examine has converted the capture file, you return to the Examine screen and the Frame Summary window appears.

Note:

If you select Examine from the Launch Pad, the Open Capture File dialog box is automatically displayed.

6.1.4. Moving Between Capture Buffers

When you have more than one capture file open in Examine or you are capturing traffic from two different networks at the same time, you need to be able to move between the temporary capture buffers.

To move between capture buffers:

Task	Action
To move to the next capture buffer	Choose Next from the Buffer menu.
To move to the previous capture buffer	Choose Previous from the Buffer menu.
To move to a specific capture buffer	Choose the capture buffer that you want to make active from the Buffer menu.

Shortcut:

Use the mouse to choose the Next Buffer button or Previous Buffer button on the Examine Toolbar.

6.1.5. Saving Captured Frames to a New Capture File

Examine allows you to save the contents of the temporary buffer to a new permanent capture file.

To save the captured frames to a new capture file:

1. Choose Save As from the File menu.

   The Save Capture File dialog box (Figure 6-5) appears.

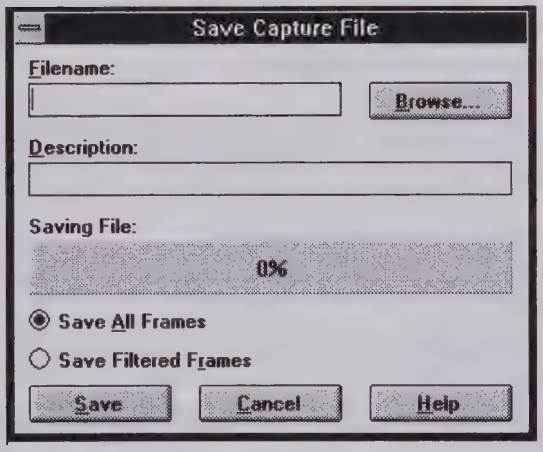


Figure 6-5 Save Capture File Dialog Box

2. Type a filename to use for the new capture file in the File Name box.
3. Choose the Browse button to save the file to a different drive or directory.

   The Capture Filename dialog box (Figure 6-6) appears allowing you to specify the drive, directory, or file type for the new capture file. Choose the OK button to return to the Save Capture File dialog box.

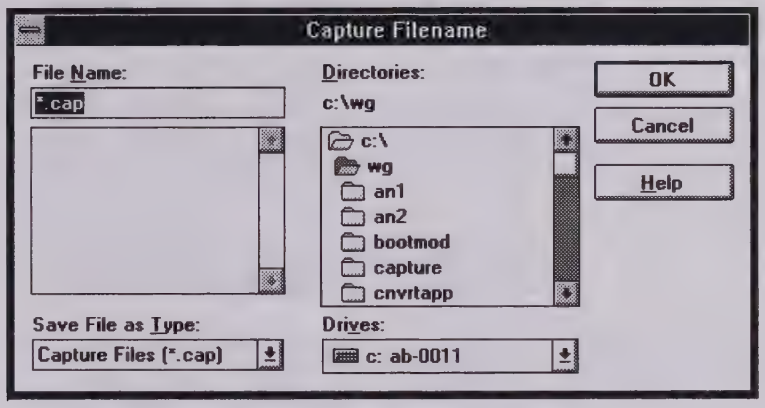


Figure 6-6 Capture Filename Dialog Box

4. If necessary, choose the Save All Frames option.

   If you choose the Save Filtered Frames option, Examine only saves the filtered frames to the new capture file.

5. Choose the Save button.

   Examine saves the contents of the capture buffer to the specified capture file. The percent done bar indicates the progress of the save.

   After Examine has saved the new capture file, you return to the Examine screen.

6.1.6. Exporting Captured Frames to a CSV File

If you want to export the contents of the current temporary capture buffer to a comma-separated value (CSV) permanent file such as a spreadsheet, the Export to CSV dialog box provides this function. You can specify the destination filename, directory, and drive of the CSV file.

The Export to CSV File dialog box appears when you choose the Export to CSV command from the File menu. If you have specified any filtering criteria, this dialog box also allows you to specify whether you want to export all of the frames in the current capture buffer or only the filtered frames. Export to CSV operates for both LAN and WAN traffic.

To export the captured frames to a CSV file:

1. Choose Export to CSV from the File menu.

   The Save CSV File dialog box (Figure 6-7) appears.

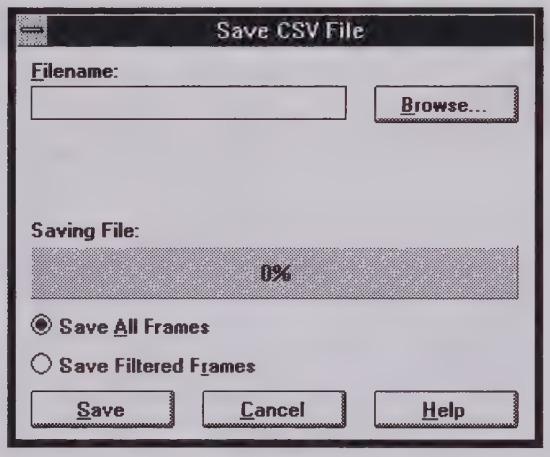


Figure 6-7 Save CSV File Dialog Box

2. Type a filename to use for the CSV file in the Filename box.
3. Choose the Browse button to save the file to a different drive or directory.

   The CSV Filename dialog box (Figure 6-8) appears allowing you to specify the drive, directory, or file type for the CSV file.
4. Choose the OK button to return to the Save CSV File dialog box.

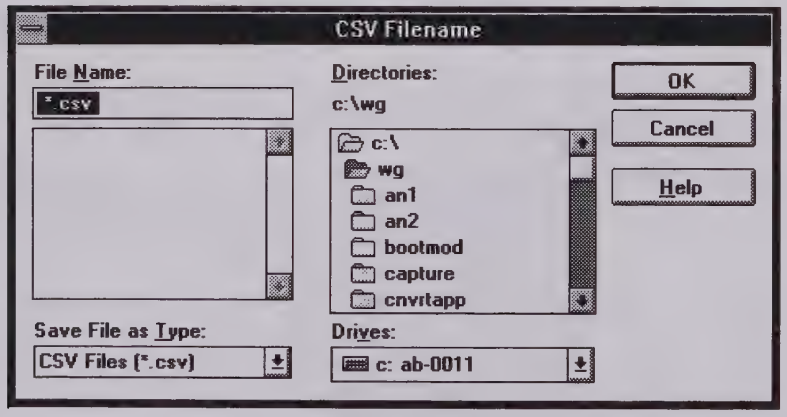


Figure 6-8 CSV Filename Dialog Box

5. Do one of the following:
   - To export all of the frames in the capture buffer to the CSV file, choose the Save All Frames option.

- To export only the filtered frames to the CSV file, choose the Save Filtered Frames option.

6. Choose the Save button.

   Examine saves the frames from the capture buffer to the specified CSV file. The percent done bar indicates the progress of the export procedure. After Examine has finished exporting the frames to the CSV file, you return to the Examine screen.

6.1.7. Closing Capture Files

It is not necessary to exit Examine to close the current capture file. You can close one capture file and continue working on other open capture files or open an additional capture file.

You can close all of the open capture files at the same time. This is helpful when you have been examining several capture files and you want to close all of them and open a different capture file.

To close the current capture file or all capture files:

♦ Choose Close or Close All from the File menu.

The capture file or files close along with the corresponding results windows.

If you close the only open capture file or all the capture files, the Open Capture File dialog box (Figure 6-2) appears. This allows you to easily open another capture file.

Shortcut:

Use the Close button on the Examine Toolbar to close the active capture file.

6.1.8. Copying Capture Files

To copy capture files from one directory to another or from one disk drive to another, do one of the following:

- Use the Copy command on the File menu of the Windows File Manager.
- Use the DOS copy command.

6.1.9. Deleting Capture Files

To delete capture files from a disk drive or directory, do one of the following:

- Use the Delete command on the File menu of the Windows File Manager
- Use the DOS delete command

6.2. Displaying Frame Information

Results windows display information about the frames in the capture buffer. The results windows are accessed from the Display menu and include:

- Frame Summary — default display
- Hexadecimal Trace
- Charater Trace
- Protocol Detail
- Protocol Summary

There are also results windows that display network-interface-specific status information.

To display a results window:

♦ Choose the results window that you want to display, from the Display menu.

The selected results window appears.

6.2.1. Network Interface-Specific Information

Examine provides options on the Display menu, for displaying results windows that are specific to the network interface used while capturing network traffic. The types of results windows available vary depending on the network interface.

To display a network interface-specific results window:

♦ Choose one of the network interface specific results windows from the Display menu.

The corresponding results window is displayed.

For information about network-interface-specific results windows, access the "Network Interfaces" topic from the DA-3x for Windows on-line help and then choose the appropriate network interface.

6.2.2. Frame Summary

The Frame Summary window displays summary information about each frame in the current capture buffer. This window is automatically displayed when you open an existing capture file or access Examine from Capture, Monitor, or an application. However, if you have previously closed this window, you can display it again. From the Frame Summary window you can access the Protocol Summary window for any of the protocols detected in the current frame.

To display the Frame Summary window:

- Choose Frame Summary from the Display menu.

The Frame Summary window (Figure 6-9) appears.

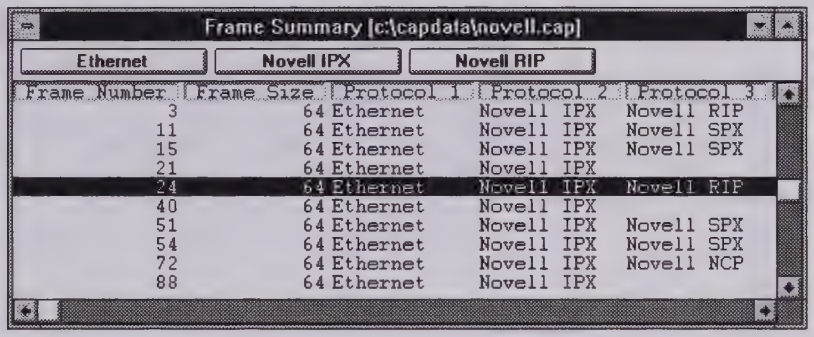

Frame Summary [c:\capdata\novell.cap]
Ethernet
Novell IPX
Novell RIP
Frame Number Frame Size Protocol 1 Protocol 2 Protocol 3
3 64 Ethernet Novell IPX Novell RIP
11 64 Ethernet Novell IPX Novell SPX
15 64 Ethernet Novell IPX Novell SPX
21 64 Ethernet Novell IPX
24 64 Ethernet Novell IPX Novell RIP
40 64 Ethernet Novell IPX
51 64 Ethernet Novell IPX Novell SPX
54 64 Ethernet Novell IPX Novell SPX
72 64 Ethernet Novell IPX Novell NCP
88 64 Ethernet Novell IPX

Figure 6-9 Frame Summary Window

To display a Protocol Summary window:

- Choose the appropriate protocol button from the Frame Summary window's toolbar. The Protocol Summary window is displayed

  The Frame Summary window (Figure 6-9) appears.

Shortcut:

Use the mouse to choose the Frame Summary button on the Examine Toolbar.

6.2.3. Hexadecimal Trace

The Hexadecimal Trace window displays the contents of each frame in hexadecimal format and character code format. The Hexadecimal Trace window also displays the ID number, time, and length for each frame.

To display the Hexadecimal Trace window:

- Choose Hex Trace from the Display menu.

The Hexadecimal Trace window (Figure 6-10) appears.

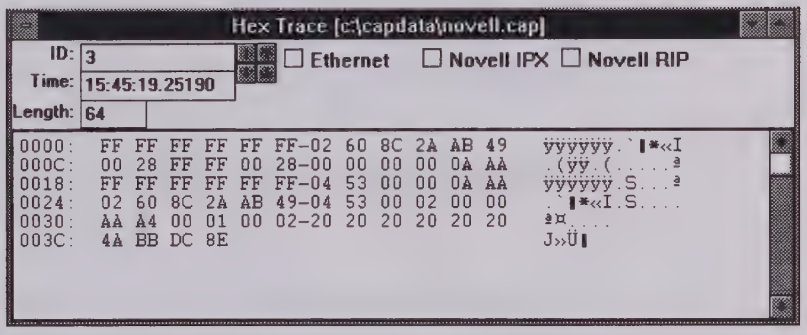

Hex Trace [c:\capdata\novell.cap]
ID: 3
Time: 15:45:19.25190
Length: 64
Ethernet
Novell IPX
Novell RIP
0000: FF FF FF FF FF FF-02 60 8C 2A AB 49
000C: 00 28 FF FF 00 28-00 00 00 00 0A AA
0018: FF FF FF FF FF FF-04 53 00 00 0A AA
0024: 02 60 8C 2A AB 49-04 53 00 02 00 00
0030: AA A4 00 01 00 02-20 20 20 20 20 20
003C: 4A BB DC 8E

Figure 6-10 Hexadecimal Trace Window

Shortcut:

Use the mouse to choose the Hexadecimal Trace button on the Examine Toolbar.

6.2.4. Character Trace

Character Trace is available for the asynchronous low speed WAN interface. The Character Trace window displays the contents of each frame in the character code format specified in the Initial Display setup along with the frame's timestamp. The following are valid character codes:

- ASCII
- ASCII Extended
- EBCD
- EBCDIC

To display the Character Trace window:

♦ Choose Character Trace from the Display menu.

The Character Trace window (Figure 6-11) appears.

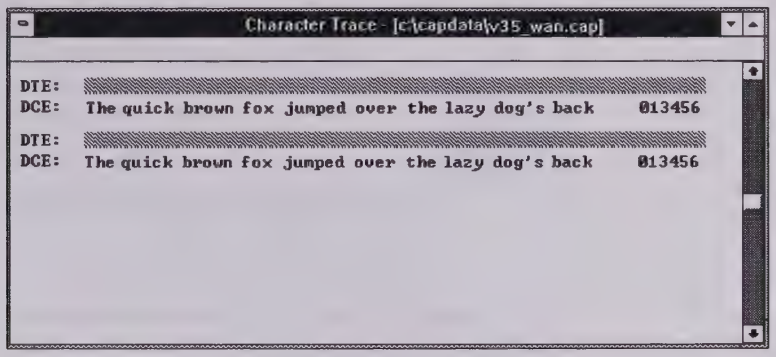

Character Trace - [c:\capdata\v35_wan.cap]
DTE:
DCE: The quick brown fox jumped over the lazy dog's back 013456
DTE:
DCE: The quick brown fox jumped over the lazy dog's back 013456

Figure 6-11 Character Trace Window

Shortcut:

Use the mouse to choose the Character Trace button on the Examine Toolbar.

6.2.5. Protocol Detail

The Protocol Detail window displays all decoded protocol elements for each frame in the current capture buffer. Frames are decoded layer-by-layer. The fields displayed in this window vary depending on the protocols contained in each frame.

To display the Protocol Detail window:

- Choose Protocol Detail from the Display menu.

The Protocol Detail window (Figure 6-12) appears.

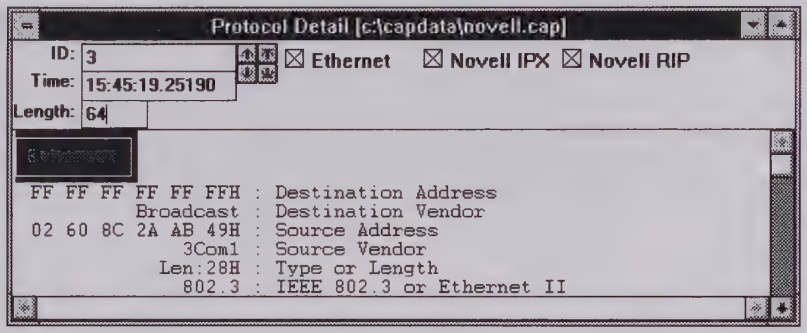

Protocol Detail [c:\capdata\novell.cap]
ID: 3
Time: 15:45:19.25190
Length: 64
Ethernet
Novell IPX
Novell RIP
FF FF FF FF FF FFH : Destination Address
Broadcast : Destination Vendor
02 60 8C 2A AB 49H : Source Address
3Com1 : Source Vendor
Len:28H : Type or Length
802.3 : IEEE 802.3 or Ethernet II

Figure 6-12 Protocol Detail Window

Shortcut:

Use the mouse to choose the Protocol Detail button on the Examine Toolbar.

6.2.6. Protocol Summary

The protocol summary windows display protocol-specific information for each frame in thecurrent temporary capture buffer. You can display a protocol summary window for each protocol contained in the currently highlighted frame.

To display a protocol summary window:

1. Choose Decodes from the Display menu.

The protocols detected in the network traffic are listed (Figure 6-13).

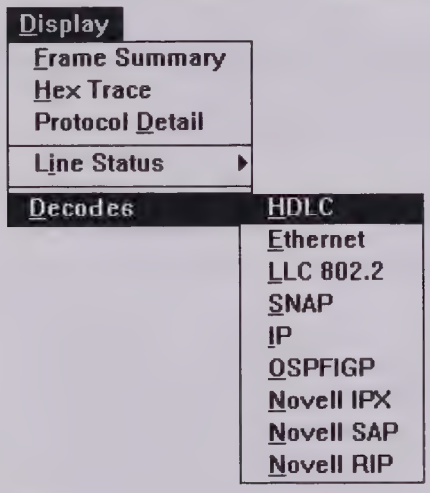


Figure 6-13 Protocol List

2. Choose one of the protocols from the list.

   The corresponding protocol-specific protocol summary window (Figure 6-14) appears.

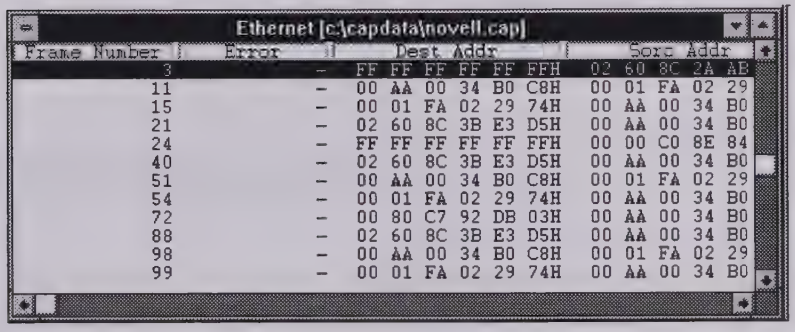


Figure 6-14 Protocol Summary Window

For information on selecting fields to display, see Section 6.6.6. "Displaying or Hiding Fields in Summary Windows".

Shortcut:

Choose the protocol-specific command button from the window's toolbar.

6.3. Searching for Specific Frames

Examine provides a full-featured search function which allows you to search through the entire temporary capture buffer for frames that match the following search criteria:

- frame number
- frame size
- character string
- hexadecimal string
- frame attributes
- protocol
- protocol-specific fields

When you perform a search, the DA-3x moves the cursor to the first frame in the temporary capture buffer that matches the search criteria.

6.3.1. Searching Forward or Backward Through the Capture File

Examine searches through the temporary capture buffer starting at the currently highlighted frame. You have the option of searching forward or you can search backward.

To search forward or backward from the current frame:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

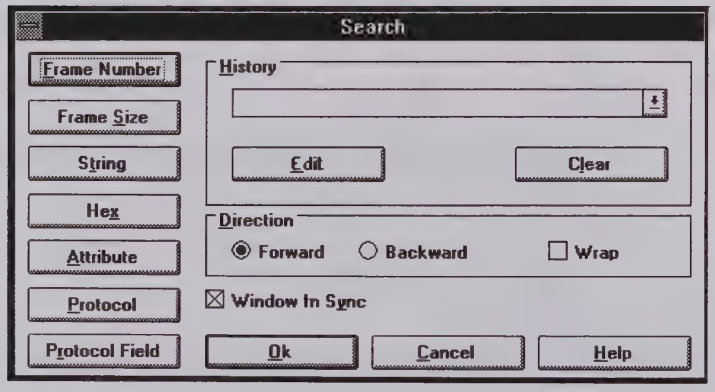


Figure 6-15 Search Dialog Box

2. Choose the Forward or Backward option in the Direction box.
3. Choose one of the search criteria.
4. Specify the search criteria and perform the search.

   Examine performs a search through the temporary capture buffer based on the specified criteria and moves the cursor to the first frame that matches the search criteria.

To continue the search through the capture file when you reach the beginning or the end:

- Before starting the search, choose the Wrap checkbox in the Search dialog box.

  The search wrap feature is enabled. When you perform the search, Examine will start over at the beginning of the temporary capture buffer when it reaches the end or it will start over at the end when it reaches the beginning of the temporary capture buffer.

Shortcut:
Choose the Search button on the Examine Toolbar.

6.3.2. Repeating a Search Using Previously Selected Criteria

Examine allows you to repeat the search command that you most recently executed without having to redefine the search criteria.

To repeat the previous search:

- Choose Repeat Search from the Buffer menu.

  Examine performs a search through the temporary capture buffer based on the criteria used during the previous search and moves the cursor to the first frame that matches the search criteria.

Shortcut:
Choose the Repeat Search button on the Examine Toolbar.

6.3.3. Repeating a Search Using the History Field

The History field in Examine's Search Dialog Box (Figure 6-15) allows you to repeat one of the last search commands that you executed without having to redefine the search criteria.

To repeat one of the previous searches:

1. In the History field on the Search dialog box, scroll backward or forward until you find the search criteria you want to use.

2. Highlight the search criteria you want to use and choose the OK button to perform the search.

   Examine performs a search through the temporary capture buffer based on the selected criteria and moves the cursor to the first frame that matches the search criteria.

6.3.4. Searching by Frame Number

The DA-3x numbers frames chronologically as they are received beginning with the number 1. Examine allows you to perform a search through the temporary capture buffer to locate a specific frame based on its frame number. When you specify the frame number to search for and start the search, Examine moves the cursor to the frame that has the specified frame number.

To search for frames based on frame number:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

2. Choose the Frame Number button.

   The Frame Number Search dialog box (Figure 6-16) appears.

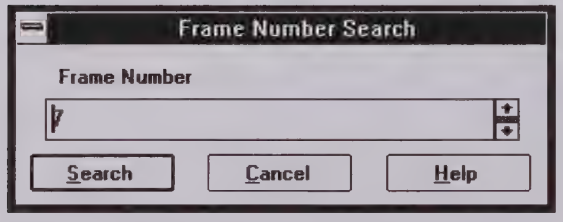


Figure 6-16 Frame Number Search Dialog Box

3. Type the frame number for which you want to search.
4. Choose the Search button.

   Examine performs the search and moves the cursor to the frame that has the specified frame number.

6.3.5. Searching by Frame Size

Examine allows you to perform a search through the temporary capture buffer to locate frames based on a specific frame size or range of sizes. When you specify the frame size to search for and start the search, Examine moves the cursor to the first frame that matches the frame size search criteria.

To search for frames by frame size:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

2. Choose the Frame Size button.

   The Frame Size Search dialog box (Figure 6-17) appears.

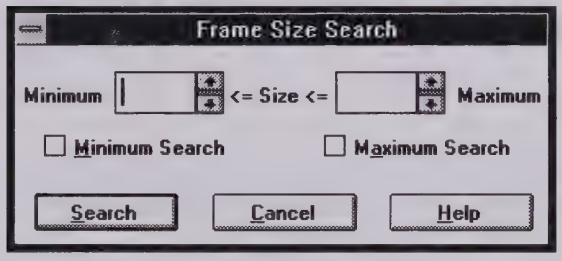


Figure 6-17 Frame Size Search Dialog Box

3. Do one of the following:

   To search for frames of a specific size:

   - In the Minimum box, type the frame size for which you want to search. Examine automatically enables the Minimum Search checkbox.
   - In the Maximum box, type the frame size for which you want to search. Examine automatically enables the Maximum Search checkbox.

   To search for frames within a range of frame sizes:

   - In the Minimum box, type the minimum frame size of the range of frames sizes for which you want to search. Examine automatically enables the Minimum Search checkbox.
   - In the Maximum box, type the maximum frame size of the range of frames sizes for which you want to search. Examine automatically enables the Maximum Search checkbox.

4. Choose the Search button.

   Examine performs the search and moves the cursor to the first frame with the specified frame size or one that falls within the specified frame size range.

6.3.6. Searching by Character String

Examine allows you to perform a search through the temporary capture buffer to locate frames containing a specific character string. When you specify the character string to search for and start the search, Examine moves the cursor to the first frame that contains the character string that you specified.

To search for frames based on a character string:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

2. Choose the String button.

   The String Search dialog box (Figure 6-18) appears.

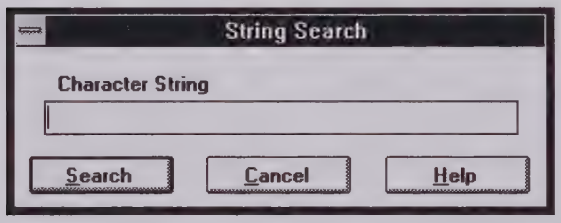


Figure 6-18 String Search Dialog Box

3. Type the character string for which you want to search.

   You can specify a character string of up to 62 characters (or 31 bytes) in length.

4. Choose the Search button.

   Examine performs the search and moves the cursor to the first frame that contains the specified character string.

Note:

The search string must be specified in the currently selected character code, such as ASCII or EBCDIC. See Section 6.6.2. "Selecting the Character Code" for how to set the character code.

6.3.7. Searching by Hexadecimal String

Examine allows you to perform a search through the temporary capture buffer to locate frames containing a specific hexadecimal string. When you specify the hexadecimal string to search for and start the search, Examine moves the cursor to the first frame that contains the hexadecimal string that you specified.

To search for frames based on a hexadecimal string:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

2. Choose the Hex button.

The Hexadecimal String Search dialog box (Figure 6-19) appears.

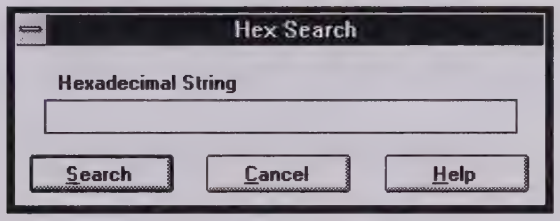


Figure 6-19 Hexadecimal String Search Dialog Box

3. Type the hexadecimal string for which you want to search.

   You can specify a hexadecimal string of up to 31 bytes in length.

4. Choose the Search button.

   Examine performs the search and moves the cursor to the first frame that contains the specified hexadecimal string.

6.3.8. Searching by Frame Attributes

Examine allows you to perform a search through the temporary capture buffer to locate frames that have specific frame attributes. When you specify the frame attributes to search for and start the search, Examine moves the cursor to the first frame that has the frame attributes that you specified.

To search for frames based on frame attributes:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

2. Choose the Attribute button.

   The Attribute Search dialog box (Figure 6-20) appears.

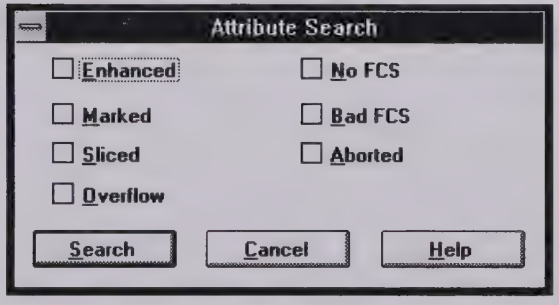


Figure 6-20 Attribute Search Dialog Box

3. Choose one or more of the frame attributes as part of the search criteria by choosing the corresponding checkbox:
   - Enhanced - highlighted in reverse video (defined in a NEP)
   - Marked - marked with the MARK.FRAME keyword (defined in a NEP)
   - Sliced - shortened before being processed (defined in an application)
   - Overflow - overflowed the frame buffer size
   - No FCS - no frame check sequence
   - Bad FCS - bad frame check sequence
   - Aborted - aborted due to errors

   A check mark appears in the checkbox for each selected frame attribute. Examine searches for frames with all the checked attributes.
4. Choose the Search button.

   Examine performs the search and moves the cursor to the first frame that has the specified frame attributes.

6.3.9. Searching by Protocol

Examine allows you to perform a search through the temporary capture buffer to locate frames that contain a specific protocol. When you specify the protocol to search for and start the search, Examine moves the cursor to the first frame that contains the specified protocol.

To search for frames based on protocol:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.
2. Choose the Protocol button.

The Protocol Search dialog box (Figure 6-21) appears, displaying a list of the protocols detected in the network traffic.

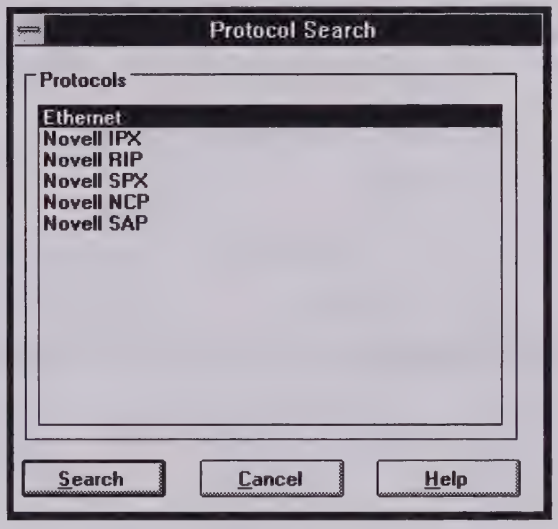


Figure 6-21 Protocol Search Dialog Box

3. Choose the protocol you want from the Protocols box.
4. Choose the Search button.

   Examine performs the search and moves the cursor to the first frame that contains the specified protocol.

6.3.10. Searching by Protocol-Specific Fields

Examine allows you to perform a search through the temporary capture buffer to locate frames that contain a protocol-specific field with a specific value. When you specify the protocol field value to search for and start the search, Examine moves the cursor to the first frame that contains the specified protocol field value.

To search for frames based on protocol-specific fields:

1. Choose Search from the Buffer menu.

   The Search dialog box (Figure 6-15) appears.

2. Choose the Protocol Field button.

   The Protocol Field Search dialog box (Figure 6-22) appears.

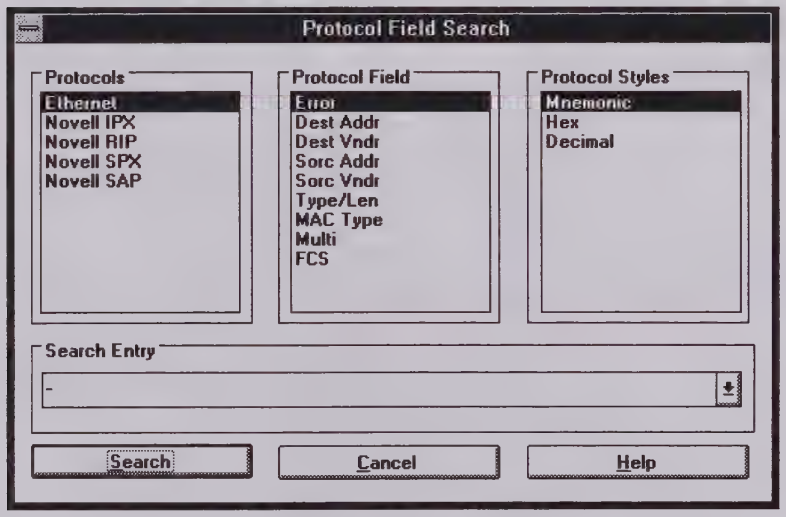


Figure 6-22 Protocol Field Search Dialog Box

3. From the Protocols box, choose the protocol that contains the field for which you want to search.

   The fields of the selected protocol are displayed in the Protocol Field box.

4. Choose the protocol-specific field for which you want to search.

5. In the Search Entry box, specify the value for which you want to search for the field that you selected in the Protocol Field box.

   For some fields, such as the Ethernet type/length field, a list of possible values is available and you can select one of these values as the search criteria. However, for other fields, such as destination address, you must type in the value.

6. To change the style used to display the field contents, move the cursor to the Protocol Styles box and choose the desired style.
7. Choose the Search button.

   Examine performs the search and moves the cursor to the first frame that contains the specified protocol field value.

6.4. Filtering Captured Frames

Examine provides two levels of filtering, Basic and Advanced, that allow you to filter the frames in the capture buffer.

Basic Filter — The default option for filtering captured traffic. The Basic Filters dialog box provides simple setup procedures for Examine's six filtering criteria: address, protocol field, protocol, pattern, frame size, and attributes. You can create filters that combine any or all six criteria or use them individually. When you invoke the filter, only those frames that match the filtering criteria are displayed.

Advanced Filter — The Advanced Filters dialog box enables you to define a filter equation that logically combines up to six types of single-event filters for greatly increased filtering flexibility. Frames targeted by filter criteria can be either included in or excluded from the Frame Summary. Individual sections of the filter can be saved, as can the entire filter equation.

When printing, saving, or exporting captured frames, you can choose to print, save, or export all of the frames in the capture buffer or only those frames that were filtered in based on the filtering criteria.

Shortcut:

You can start filter setup by choosing the Filter button {bmc help0038.bmp} on the Examine Toolbar.

6.4.1. Basic Filtering

The Basic Filters dialog box (Figure 6-23) enables you to filter frames according to address, protocol field, protocol, pattern, frame size, and attributes. You can set up all six filter criteria and then selectively enable them to filter on any or all characteristics. The filter criteria are logically ANDed. When you invoke the filter, only those frames that match the filtering criteria are displayed. You can also save and retrieve the filter.

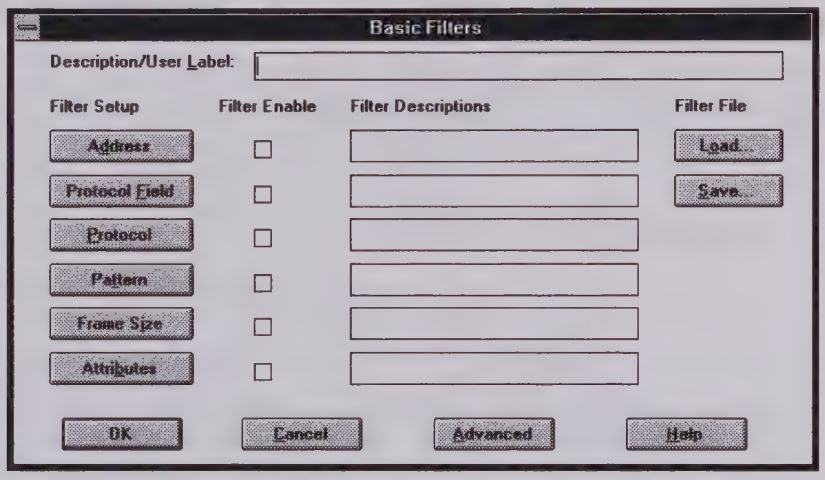


Figure 6-23 Basic Filters Dialog Box

To create a basic filter:

1. From the Buffer menu, choose Filter.

   The Basic Filters dialog box appears.

2. In the Description/User Label box, type a description for the filter criteria that you want to create.

3. Choose the button for the filter criterion that you want to set up.

   The setup dialog box for that filter type is displayed.

4. Complete the setup for the filter type that you have selected. The six filter types are:

Filter Option	Setup Summary
Addresses	Filters capture frames based on both source and destination addresses using either numeric address or nodenames, and includes an option for specifying the address layer.
Protocol Field	Filters captured frames based on one or more fields of a specific protocol.
Protocol	Filters captured frames based on one or more protocols.
Pattern	Filters captured frames based on a binary, hexadecimal, or text string. You can search for the pattern at a specific offset within a frame or scan the entire frame for the occurrence of the pattern. The current Character Code setting gov-

	erns the match with the pattern you are filtering on.
Frame Size	Filters captured frames based on frame size or a range of frame sizes.
Attributes	Filters captured frames based on frame attributes.

5. Choose the OK button.

   Frames that match the defined filter criteria are displayed in the Frame Summary window.

6.4.1.1 Saving a Basic Filter

The Save As option on the Basic Filters dialog box enables you to save the filter that you create.

To save a basic filter:

1. On the Basic Filters dialog box, choose the Save As button.

   The Save As dialog box is displayed.

2. Type the name of the filter file you are saving. (The default extension for filter files is .FLT.)
3. Choose the OK button.

   Your filter is saved to the \WG\FILTERS directory and you return to the Basic Filters dialog box.

6.4.1.2 Loading a Saved Basic Filter

The Load option enables you to load a previously saved filter into the Basic Filters dialog box.

To load a basic filter:

1. On the Basic Filters dialog box, choose the Load button.

   The Open dialog box is displayed.

2. Select the name of the filter file you want to load.

   The Description box displays the descriptive label you saved with the file.

3. Choose the OK button.

   Your filter is loaded into the Basic Filters dialog box.

Note:

If the filter you select is not a basic filter, an error box is displayed to inform you that the filter you have selected contains the wrong filter information.

6.4.2. Advanced Filtering

The Advanced Filter option enables you to create filter equations using six filter criteria and a full set of logical operators to customize the display of captured frames. It also allows you to specify whether frames that match the filter criteria are included in or excluded from the display, and provides the option to temporarily disable the filter and display all captured frames. You can also save filter equations to a file and retrieve them to reuse or edit.

To create an advanced filter equation:

1. From the Buffer menu, choose Filter.

   The Basic Filters dialog box is displayed.

2. Choose the Advanced Button.

   The Advanced Filters dialog box (Figure 6-24) is displayed.

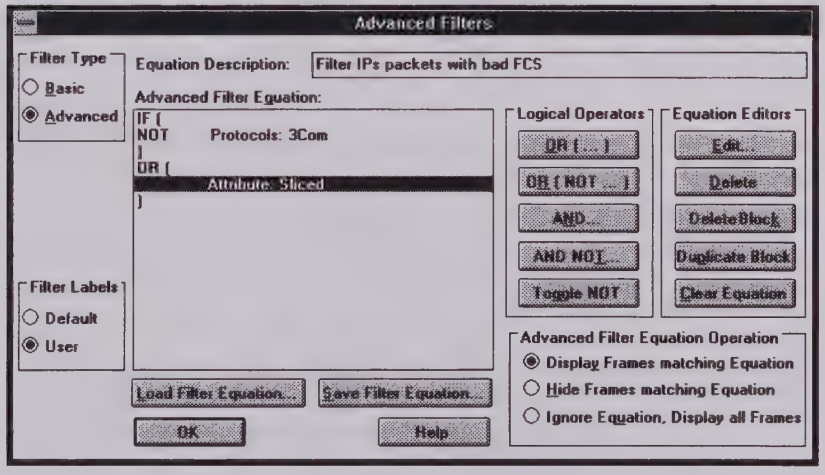


Figure 6-24 Advanced Filters Dialog Box

3. In the Equation Description box, type a description for the filter equation you want to create.

   When you choose the Save Filter Equation button, the equation description is saved with the filter equation.

4. Choose the IF(...) or IF (NOT...) logical operator button to add the first block to the equation.

   The New Filter dialog box (Figure 6-25) is displayed.

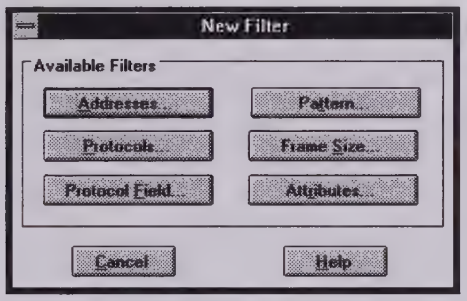


Figure 6-25 New Filter Dialog Box

5. Choose one of the available filter types. The options are: Addresses, Protocols, Protocol Field, Pattern, Frame Size, and Attributes.

   The setup dialog box that corresponds to the filter type you selected is displayed.

6. Complete the filter specification and choose the OK button on the filter setup dialog box.

   The Advanced Filters dialog box is displayed. The new filter description is added to the equation in a block with the logical operator you selected. The IF(...) and IF(NOT...) buttons change to OR(...) and OR(NOT...), respectively, and all other logical operator buttons are enabled to allow you to add other criteria to the equation.

7. Repeat the process of selecting logical operators and adding filter conditions to the equation until you have defined all the conditions you want to filter on.

8. In the Advanced Filter Equation Operation box, choose the option that describes how you want the filter to affect the display of frames. The options are:

Display Frames Matching Equation	Only frames matching the filter criteria are included in the Frame Summary.
Hide Frames Matching Equation	Frames matching the filter criteria are excluded from the Frame Summary.
Ignore Equation, Display All Frames	Temporarily disables the filter you have defined so that you can view all captured frames.

9. Choose the Save Filter Equation button to save the equation if you expect to use it again.

10. Choose the OK button.

    The Frame Summary window is displayed with frames filtered according to the filter criteria you have defined.

6.4.2.1 Filtering Based on Address

The Address filter enables you to filter captured traffic according to source and destination address.

Address is one of the six filter criteria available with both the Basic Filter and the Advanced Filter. You access the Basic Filters dialog box by choosing Filter from the Buffer menu. To access the Advanced Filters dialog box select the Advanced button on the Basic Filters dialog box.

The format of the addresses you enter is determined by the Address Layer you select. The layers supported and the appropriate address format for each are as follows:

Address Layer	Address format
Ethernet	Ethernet address, specified as a six-byte MAC address. Example: 00-80-16-96-00-B0
TR802.5	Token Ring address, specified as a six-byte MAC address. Example: 00:01:68:69:00:0D
HDLC	Source address: DCE Destination address: DTE
IP	TCP/IP network address specified in dotted decimal format. Example: 9.67.102.37
Novell IPX	Novell IPX network address specified as network.node. Example: 11223344.5566778899AA
XNS IDP	XNS IDP network address, specified as network.node. Example: 045C819D.10005A112233
DECnet DRP	DECnet network address, specified as area.node. Example: 56.1011
Apple DDP E	AppleTalk network address, specified as network number.node. Example: 63.255
VINES IP	Banyan VINES network address, specified as network.subnet. Example: 12345678.6677

To set up a basic address filter:

1. On the Basic Filters dialog box, choose the Address button.

   The Addresses Filter dialog box (Figure 6-26) is displayed.

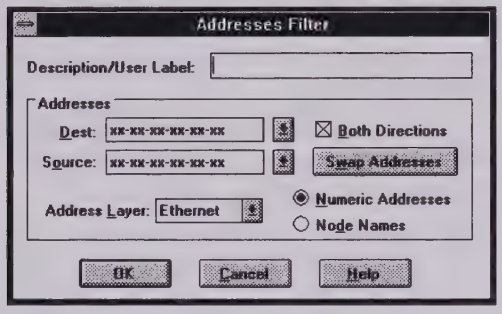


Figure 6-26 Addresses Filter Dialog Box

2. In the Description/User Label box, enter a description of the filter.

   The description you enter in the Description/User Label box appears in the Filter Descriptions box for the Address filter on the Basic Filters dialog box.

3. In the Address Layer box, select the protocol layer for the addresses you want to base the filter on.

   The address boxes display an address format consistent with the layer you select.

4. In the Destination box, type an address.

5. In the Source box, type an address.

6. To specify that filtering should occur in both directions, choose the Both Directions checkbox. If this option is not enabled, filtering is only performed on frames going from the source to the destination.

7. Choose the OK button.

   You return to the Basic Filters dialog box. The address filter that you created is added to the filter criteria. When you choose OK to accept all of the filtering criteria, Examine filters the captured traffic using the address filter you specified.

To set up an advanced address filter:

1. On the Advanced Filters dialog box, choose a logical operator button to add a new block to the filter equation.

   The New Filter dialog box is displayed.

2. Choose the Addresses button.

   The Addresses Filter dialog box is displayed.

3. In the Description/User Label box, enter a description of the filter.

   If you save the filter, the description is stored with the filter. If you chose the User Filter Labels option on the Advanced Filters dialog box, the description you enter in the Description/User Label box will appear as the filter label in the Advanced Filter Equation.

4. In the Address Layer box, select the protocol layer for the addresses you want to base the filter on.

   The address boxes display an address format consistent with the layer you select.

5. In the Destination box, type an address.

6. In the Source box, type an address.

7. To specify that filtering should occur in both directions, choose the Both Directions checkbox. If this option is not enabled, filtering is only performed on frames going from the source to the destination.

8. Choose the OK button.

   You return to the Advanced Filters dialog box. The address filter that you created is added to the filter equation. When you choose OK to accept the equation, Examine filters the captured traffic using the address filter you specified.

6.4.2.2 Filtering Based on Frame Size

The Frame Size filter enables you to filter captured traffic according to minimum frame size, maximum frame size, a specific frame size, or a range of frame sizes.

Frame Size is one of the six filter criteria available with both the Basic Filter and the Advanced Filter. You access the Basic Filters dialog box by choosing Filter from the Buffer menu. To access the Advanced Filters dialog box select the Advanced button on the Basic Filters dialog box.

To set up a basic frame size filter:

1. On the Basic Filters dialog box, choose the Frame Size button.

   The Frame Size Filter dialog box (Figure 6-27) is displayed.

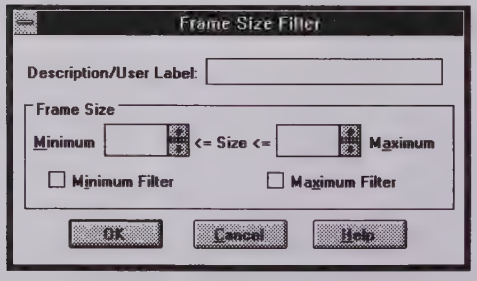


Figure 6-27 Frame Size Filter Dialog Box

2. In the Description/User Label box, enter a description of the filter.

   The description you enter in the Description/User Label box appears in the Filter Descriptions box for the Frame Size filter on the Basic Filters dialog box.

3. To create your filter, enter frame size values in the Minimum and Maximum boxes as follows:

To filter for...	Do this...
Minimum frame size	In the Minimum box, enter the smallest frame size you want to include in the filter.
Maximum frame size	In the Maximum box, enter the largest frame size you want to include in the filter.
Specific frame size	Enter the specific frame size you want to include in the filter in both the Minimum and Maximum boxes.
Range of frame size	In the Minimum box, enter the smallest frame size in the range. In the Maximum box, enter the largest frame size in the range.

4. Choose the OK button.

   You return to the Basic Filters dialog box. The frame size filter that you created is added to the filter criteria. When you choose OK to accept all of the filtering criteria, Examine filters the captured traffic using the frame size filter you specified.

To set up an advanced frame size filter:

1. On the Advanced Filters dialog box, choose a logical operator button to add a new block to the filter equation.

   The New Filter dialog box is displayed.

2. Choose the Frame Size button.

   The Frame Size Filter dialog box (Figure 6-27) is displayed.

3. In the Description/User Label box, enter a description of the filter.

   If you save the filter, the description is stored with the filter. If you chose the User Filter Labels option on the Advanced Filters dialog box, the description you enter in the Description/User Label box will appear as the filter label in the Advanced Filter Equation.

4. To create your filter, enter frame size values in the Minimum and Maximum boxes as follows:

To filter for...	Do this...
Minimum frame size	In the Minimum box, enter the smallest frame size you want to include in the filter.
Maximum frame size	In the Maximum box, enter the largest frame size you want to include in the filter.
Specific frame size	Enter the specific frame size you want to include in the filter in both the Minimum and Maximum boxes.
Range of frame sizes	In the Minimum box, enter the smallest frame size in the range. In the Maximum box, enter the largest frame size in the range.

5. Choose the OK button.

   You return to the Advanced Filters dialog box. The frame size filter that you created is added to the filter equation. When you choose OK to accept the equation, Examine filters the captured traffic using the frame size filter you specified.

6.4.2.3 Filtering Based on Pattern

The Pattern filter enables you to filter captured network traffic based on whether or not a frame contains a specific pattern or character string. You can specify the pattern in binary, hexadecimal, or text format. The currently selected character code determines the format of text patterns.

Pattern is one of the six filter criteria available with the Advanced Filter. You access the Advanced Filters dialog box by choosing Filter from the Buffer menu, and then selecting the Advanced filter type option.

The Pattern filter allows you to use wildcard characters to mask portions of a pattern that are not significant to the filter you are defining. For hexadecimal and binary patterns the wildcard character is the letter X; for text patterns it is a question mark(?). For example, if you were only interested in binary sequences in which the digits '1010' appeared in the first four bits, you could filter for the pattern 'XXXX1010'.

An inverted question mark in the pattern signifies an unprintable character. It also appears when the appropriate character cannot be displayed when you switch formats, for example, when you specify a single bit as a wildcard in binary format, and then switch to hexadecimal or text format.

To filter captured traffic based on pattern (Basic):

1. On the Basic Filters dialog box, choose the Pattern button.

   The Pattern Filter dialog box (Figure 6-28) is displayed.

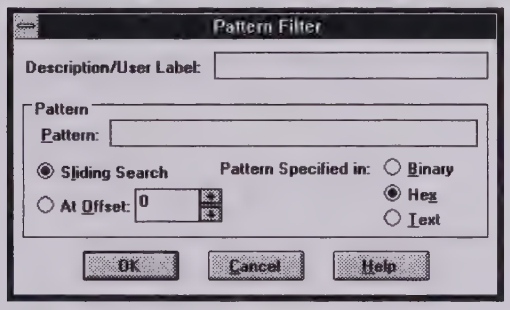


Figure 6-28 Pattern Filter Dialog Box

2. In the Description/User Label box, enter a description of the filter.

   The description you enter in the Description/User Label box appears in the Filter Descriptions box for the Pattern filter on the Basic Filters dialog box.

3. In the Pattern box, enter the character string to use as the filtering criteria.

   The maximum string length is 32 bytes.

4. Specify the pattern location method. The options are:

   Sliding Search — Specifies that the entire frame is to be searched for a pattern match. This is the default.

   At Offset (#) — Specifies a search for the filter string at a specific offset into the frame. The offset is zero-based.

5. Specify the format of the pattern: Binary, Hexadecimal, or Text.

   The pattern you have entered in the Pattern box is displayed in the format you select, and the captured frames are searched for a pattern match in the specified format.

6. Choose the OK button.

   You return to the Basic Filters dialog box. The pattern filter that you created is added to the filter criteria. When you choose OK to accept all of the filtering criteria, Examine filters the captured traffic using the pattern filter you specified.

To filter captured traffic based on pattern (Advanced):

1. On the Advanced Filters dialog box, choose a logical operator button to add a new block to the filter equation.

   The New Filter dialog box is displayed.

2. Choose the Pattern button.

   The Pattern Filter dialog box is displayed.

3. In the Description/User Label box, enter a description of the filter.

   If you save the filter, the description is stored with the filter. If you chose the User Filter Labels option on the Advanced Filters dialog box, the description you enter in the Description/User Label box will appear as the filter label in the Advanced Filter Equation.

4. In the Pattern box, enter the character string to use as the filtering criteria.

   The maximum string length is 32 bytes.

5. Specify the pattern location method. The options are:

Sliding Search	Specifies that the entire frame is to be searched for a pattern match. This is the default.
At Offset (#)	Specifies a search for the filter string at a specific offset into the frame. The offset is zero-based.

6. Specify the format of the pattern: Binary, Hexadecimal, or Text.

   The pattern you have entered in the Pattern box is displayed in the format you select, and the captured frames are searched for a pattern match in the specified format.

7. Choose the OK button.

   You return to the Advanced Filters dialog box. The pattern filter that you created is added to the filter equation. When you choose OK to accept the equation, Examine filters the captured traffic using the pattern filter you specified.

6.4.2.4 Filtering Based on Frame Attribute

The Frame Attribute filter enables you to specify certain frame characteristics as criteria for filtering captured traffic.

Frame Attribute is one of the six filter criteria available with the Advanced Filter. You access the Advanced Filters dialog box by choosing Filter from the Buffer menu, and then selecting the Advanced filter type option.

To filter captured traffic based on frame attributes (Basic):

1. On the Basic Filters dialog box, choose the Attributes button.

   The Attribute Filter dialog box (Figure 6-29) is displayed.

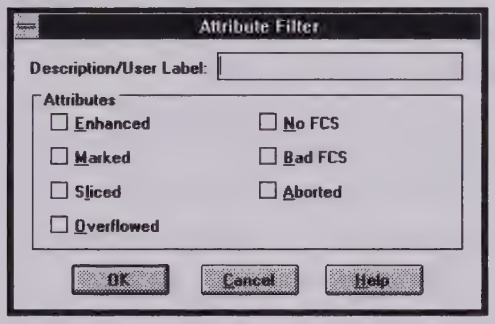


Figure 6-29 Attribute Filter Dialog Box

2. In the Description/User Label box, enter a description of the filter.

   The description you enter in the Description/User Label box appears in the Filter Descriptions box for the Attribute filter on the Basic Filters dialog box.

3. Choose one or more of the frame attributes as part of the filtering criteria by choosing the corresponding checkbox:

Enhanced	A frame that is highlighted because it meets criteria specified in by an application.
Marked	A frame that is marked or tagged because it meets criteria specified in an application.
Sliced	A frame that was sliced based on the frame slicing criteria specified in the application.
Overflow	A frame that overflows the frame buffer size of 4000 bytes.
No FCS	A frame that does not contain a frame check sequence.
Bad FCS	A frame that contains a bad frame check sequence.
Aborted	A frame that was aborted due to hardware errors.

   A checkmark appears in the checkbox for each selected frame attribute.

4. Choose the OK button.

   You return to the Basic Filters dialog box. The attribute filter that you created is added to the filter criteria. When you choose OK to accept all of the filtering criteria, Examine filters the captured traffic using the frame attribute filter you specified.

To filter captured traffic based on frame attributes (Advanced):

1. On the Advanced Filters dialog box, choose a logical operator button to add a new block to the filter equation.

   The New Filter dialog box is displayed.

2. Choose the Attributes button.

   The Attribute Filter dialog box is displayed.

3. In the Description/User Label box, enter a description of the filter.

   If you save the filter, the description is stored with the filter. If you chose the User Filter Labels option on the Advanced Filters dialog box, the description you enter in the Description/User Label box will appear as the filter label in the Advanced Filter Equation.

4. Choose one or more of the frame attributes as part of the filtering criteriaby choosing the corresponding checkbox:

Enhanced	A frame that is highlighted because it meets criteria specified in by an application.
Marked	A frame that is marked or tagged because it meets criteria specified in an application.
Sliced	A frame that was sliced based on the frame slicing criteria specified in the application.
Overflow	A frame that overflows the frame buffer size of 4000 bytes.
No FCS	A frame that does not contain a frame check sequence.
Bad FCS	A frame that contains a bad frame check sequence.
Aborted	A frame that was aborted due to hardware errors.

   A checkmark appears in the checkbox for each selected frame attribute.

5. Choose the OK button.

   You return to the Advanced Filters dialog box. The frame attribute filter that you created is added to the filter equation. When you choose OK to accept the equation, Examine filters the captured traffic using the frame attribute filter you specified.

6.4.2.5 Filtering Based on Protocol

The Protocols filter enables you to filter captured network traffic based on the protocol contained in the frame.

Protocol is one of the six filter criteria available with the Advanced Filter. You access the Advanced Filters dialog box by choosing Filter from the Buffer menu, and then selecting the Advanced filter type option.

To filter captured traffic based on protocol (Basic):

1. On the Basic Filters dialog box, choose the Protocol button.

   The Protocol Filter dialog box (Figure 6-30) is displayed.

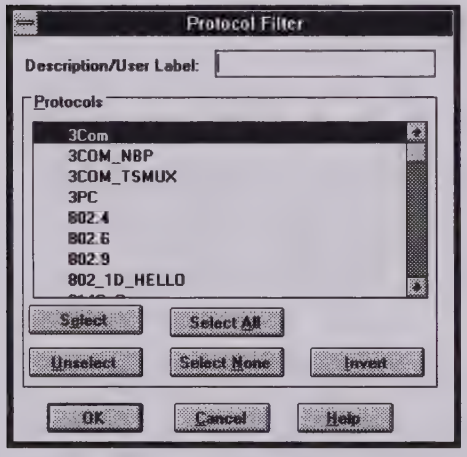


Figure 6-30 Protocol Filter Dialog Box

2. In the Description/User Label box, enter a description of the filter.

   The description you enter in the Description/User Label box appears in the Filter Descriptions box for the Protocol filter on the Basic Filters dialog box.

3. From the Protocols box, choose the desired protocol, then choose the Select button.

   Repeat this step to select all of the protocols that you want to specify as the filtering criteria.

4. Choose the OK button.

   You return to the Basic Filters dialog box. The protocol filter that you created is added to the filter criteria. When you choose OK to accept all of the filtering criteria, Examine filters the captured traffic using the protocol filter you specified.

To filter captured traffic based on protocol (Advanced):

1. On the Advanced Filters dialog box, choose a logical operator button to add a new block to the filter equation.

   The New Filter dialog box is displayed.

2. Choose the Protocol button.

   The Protocol Filter dialog box is displayed.

3. In the Description/User Label box, enter a description of the filter.

   If you save the filter, the description is stored with the filter. If you chose the User Filter Labels option on the Advanced Filters dialog box, the description you enter in the Description/User Label box will appear as the filter label in the Advanced Filter Equation.

4. From the Protocols box, choose the desired protocol, then choose the Select button.

   Repeat this step to select all of the protocols that you want to specify as the filtering criteria.

5. Choose the OK button.

   You return to the Advanced Filters dialog box. The protocol filter that you created is added to the filter equation. When you choose OK to accept the equation, Examine filters the captured traffic using the protocol filter you specified.

6.4.2.6 Filtering Based on Protocol-Specific Fields

The Protocol Field filter enables you to filter captured network traffic based on the content of protocol-specific fields in the frame.

Protocol Field is one of the six filter criteria available with the Advanced Filter. You access the Advanced Filters dialog box by choosing Filter from the Buffer menu, and then selecting the Advanced filter type option.

To set up a basic filter to capture traffic based on protocol-specific fields:

1. On the Basic Filters dialog box, choose the Protocol Field button.

   The Protocol Field Filter dialog box (Figure 6-31) is displayed.

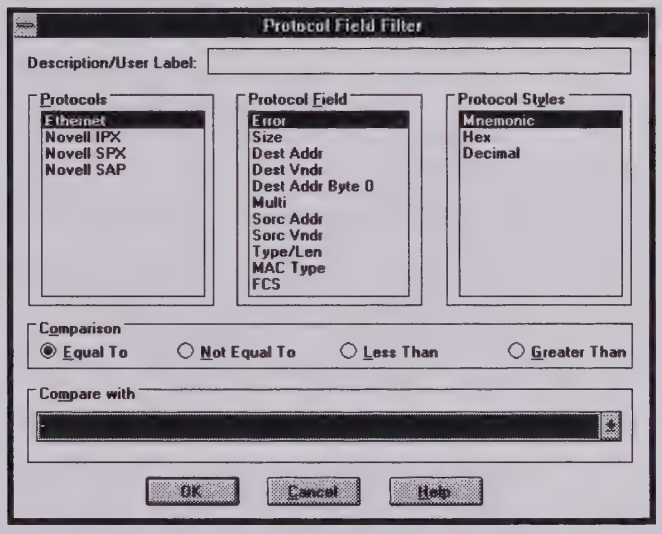


Figure 6-31 Protocol Field Filter Dialog Box

2. In the Description/User Label box, enter a description of the filter.

   The description you enter in the Description/User Label box appears in the Filter Descriptions box for the Protocol Field filter on the Basic Filters dialog box.

3. In the Protocols box, choose the protocol that contains the field that you want to select as the filtering criteria.

4. In the Protocol Field box, choose the field that you want to select as the filtering criteria.

   A list of styles appropriate for the selected field is displayed in the Protocols Styles box. Also, depending on the selected field, the Compare With box displays selectable values appropriate to the field, or is blank so that you can enter a value.

5. In the Protocol Styles box, choose the format of the field as you want it to be matched in the filter search.

6. In the Comparison box, select the operator to compare the protocol field content with the value you specify in the Compare With box. The optionsare: Equal To, Not Equal To, Less Than, and Greater Than.

7. In the Compare With box specify the value that you want to use as the filtering criteria for the selected Protocol Field.

   Either select a value from the list of possible values that is provided for a given field or type in the value.

8. Choose the OK button.

   You return to the Basic Filters dialog box. The protocol field filter that you created is added to the filter criteria. When you choose OK to accept all of the filtering criteria, Examine filters the captured traffic using the protocol field filter you specified.

To set up an advanced filter to capture traffic based on protocol-specific fields:

1. On the Advanced Filters dialog box, choose a logical operator button to add a new block to the filter equation.

   The New Filter dialog box is displayed.

2. Choose the Protocol Fields button.

   The Protocol Field Filter dialog box is displayed.

3. In the Description/User Label box, enter a description of the filter.

   If you save the filter, the description is stored with the filter. If you chose the User Filter Labels option on the Advanced Filters dialog box, the description you enter in the Description/User Label box will appear as the filter label in the Advanced Filter Equation.

4. In the Protocols box, choose the protocol that contains the field that you want to select as the filtering criteria.

5. In the Protocol Field box, choose the field that you want to select as the filtering criteria.

   A list of styles appropriate for the selected field is displayed in the Protocols Styles box. Also, depending on the selected field, the Compare With box displays selectable values appropriate to the field, or is blank so that you can enter a value.

6. In the Protocol Styles box, choose the format of the field as you want it to be matched in the filter search.

7. In the Comparison box, select the operator to compare the protocol field content with the value you specify in the Compare With box. The options are: Equal To, Not Equal To, Less Than, and Greater Than.

8. In the Compare With box specify the value that you want to use as the filtering criteria for the selected Protocol Field.

   Either select a value from the list of possible values that is provided for a given field or type in the value.

9. Choose the OK button.

   You return to the Advanced Filters dialog box. The protocol field filter that you created is added to the filter equation. When you choose OK to accept the equation, Examine filters the captured traffic using the protocol field filter you specified.

6.4.2.7 Modifying Filtering Criteria

When you create a filter equation in the Advanced Filters dialog box and choose the OK button, the Frame Summary is displayed on the Examine screen with the captured frames displayed according to the filtering conditions you specified. If you want to change the filter conditions, return to the Advanced Filters dialog box; the current filter is displayed in the Advanced Filter Equation box.

You can modify the filter conditions using the Equation Editor buttons on right hand side of the dialog box. These buttons enable you to edit or delete individual conditions, delete or duplicate entire blocks of filtering conditions, or clear all entries from the equation.

Note:

A block is the set of ANDed filter conditions enclosed in parentheses that follows a logical operator (such as IF, IF(NOT), OR, or OR(NOT)) in a filter equation.

To modify filtering criteria:

1. Access the Advanced Filters dialog box by choosing Filter from the Buffer menu.

   The Advanced Filters dialog box is displayed.

2. To make changes to the filter conditions, use the following procedures:

To make this change...	Use this procedure...
Edit a filter condition	1. Position the cursor on the filter condition you want to change and choose the Edit button to display the appropriate filter dialog box.2. Make the desired changes to the filter and choose the OK button to return to the Advanced Filters dialog box.
Delete a filter condition	Position the cursor on the filter condition that you want to delete and choose the Delete button.
Delete an entire block of the equation	Position the cursor on the logical operator at the beginning of the block that you want to delete and choose the Delete Block button.

To make this change...	Use this procedure...
Duplicate an entire block of the equation	Position the cursor on the logical operator at the beginning of the block that you want to duplicate and choose the Duplicate Block button.
Discard the entire equation	Choose the Clear Equation button, and when the Verification box is displayed, choose the Yes button.

6.4.2.8 Saving a Filter Equation

You can save the filter equations that you create to a file and retrieve them for later use.

To save a filter equation:

1. On the Advanced Filters dialog box, choose the Save Filter Equation button.

   The Save As dialog box is displayed.

2. Type the name of the filter equation file you are saving. (The default extension for filter equation files is .FEQ.)

3. Choose the OK button.

   Your filter equation is saved to the \WG\FILTERS directory and you return to the Advanced Filters dialog box.

6.4.2.9 Loading a Filter Equation

The Load Filter Equation option on the Advanced Filters dialog box enables you to load a previously saved filter equation into the Advanced Filters dialog box.

To load a saved filter equation:

1. On the Advanced Filters dialog box, choose the Load Filter Equation button.

   The Open dialog box is displayed.

2. Highlight the name of the filter equation file you want to load.

   The Description field displays the descriptive label you saved with the file.

3. Choose the OK button.

   You are returned to the Advanced Filters dialog box and the filter equation you specified is loaded into the Advanced Filter Equation box.

6.4.3. Saving Filtered Frames to a New Capture File

After filtering the network traffic in the capture buffer, you can save just the filtered frames to a new capture file. The Filter indicator on the status bar, at the bottom of the Examine screen, indicates whether or not the captured traffic has been filtered.

To save the filtered frames to a new capture file:

1. From the File menu, choose Save As.

   The Save Capture File dialog box (Figure 6-32) is displayed.

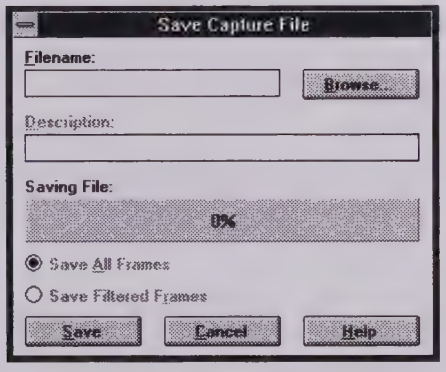


Figure 6-32 Save Capture File Dialog Box

2. In the File Name box, type a filename to use for the new capture file.
3. To save the file to a different drive or directory choose the Browse button.

   The Capture Filename dialog box is displayed allowing you to specify the drive, directory, or file type for the new capture file.
4. Choose the Save Filtered Frames option.
5. Choose the Save button.

   Examine saves the filtered frames to the specified capture file. The percent done bar indicates the progress of the save. After Examine has saved the new capture file, you return to the Examine screen.

7. Application Manager

The Application Manager allows you to select and manage existing applications or to define new applications. You can use applications provided by W&G or you can create your own applications. The applications allow you to monitor or analyze network traffic, generate traffic, filter traffic, and test network hardware and software.

When you use the Application Manager, you work primarily with the Group List and the Application List. The Group List graphically displays the structure of the application groups and subgroups on a disk. The Application List displays a listing of all of the applications contained in the current application group.

Caution:

Do not use DOS commands to alter DA-3x files as this may corrupt a file making it unusable. You can use File Manager to move, copy, or delete entire directories, but not individual files.

7.1. Application Directory Structure

The DA-3x's applications are organized in a tree-structured directory (Figure 7-1) similar to the DOS directory tree. The Application Manager organizes applications into groups, similar to the DOS organization of files into directories. Applications are filed under an appropriate group name.

The root group has subgroups that branch from it, for example, an Ethernet group, a Token Ring group, and a V.35 group (Figure 7-1). You can create subgroups within the root group or within other subgroups.

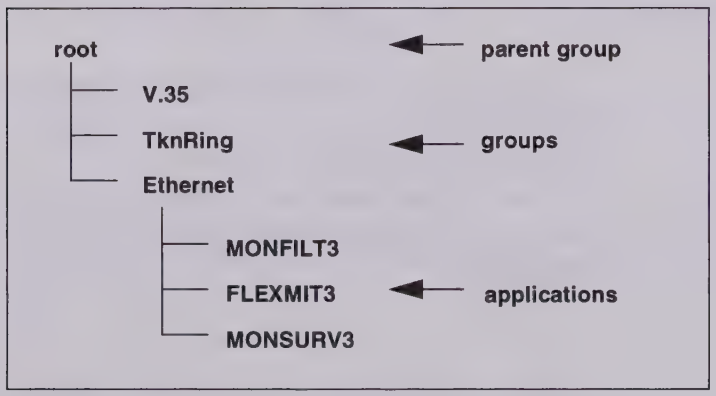


Figure 7-1 Application Directory

7.1.1. Starting Application Manager

When you start up the DA-3x, it automatically runs Windows and the Launch Pad. From the Launch Pad screen, you can easily access the Application Manager.

To start the Application Manager:

- Choose Appl Manager from the Launch menu.

  The Application Manager screen (Figure 7-2) appears.

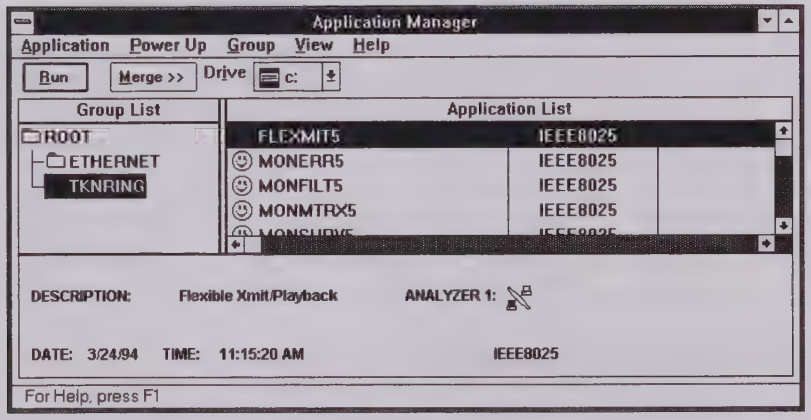


Figure 7-2 Application Manager

Shortcut:

Use the Appl Mgr button on the Launch Pad.

7.1.2. Exiting Application Manager

To exit the Application Manager and return to the Launch Pad screen do one of the following:

- Choose Exit from the Application menu.
- Use the Close command on the application Control menu.

The Application Manager prompts you to save the application if changes have been made.

7.2. Managing Application Groups

Before you can work with an application group, you must select it. You can only select one application group at a time. When an application group is selected, its name is highlighted in the Group List.

In the Group List, you can select a single application group and then use the commands on the Group menu to work with it.

7.2.1. Selecting an Application Group

The Group List (Figure 7-3) displays the structure of the current drive and the Application List displays the contents of the current application group. When you change to a different application group, the names of the applications in that application group are displayed in the Application List.

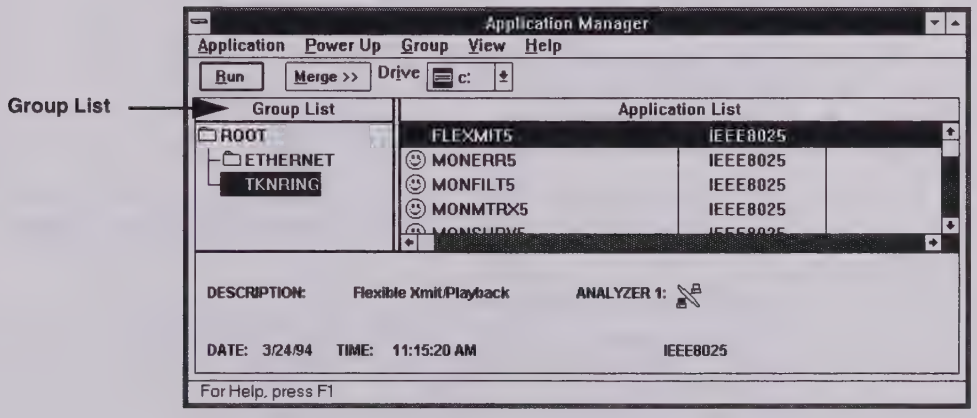


Figure 7-3 Application Group List

To select an application group:

- Use the mouse or Tab and arrow keys to select the application group that you want.

Tip:

In a long list of groups or applications, press the first letter of the group or application you want to access, then cursor down to reach the name you want.

7.2.2. Creating an Application Group

You can create an application group by using the Create command on the Group menu. After you create an application group, you can copy applications and application subgroups to it from other locations by using the Move and Copy commands on the Application and Group menus.

To create an application group:

1. Select the application group from the Group List in which you want the new application group to appear.
2. Choose Create from the Group menu.

   The Create Group dialog box (Figure 7-4) appears.

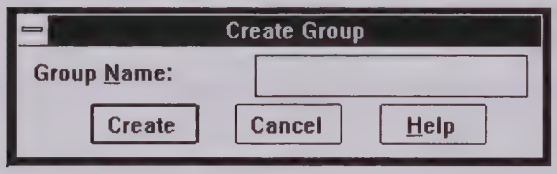


Figure 7-4 Create Group Dialog Box

3. Type a name for the new application group in the Group Name box. The name can have a maximum of 11 alphanumeric characters with no spaces and no extension.
4. Choose the Create button.

   The Application Manager creates the specified application group in the specified location and returns to the Application Manager screen.

7.2.3. Copying an Application Group

You can use the Copy command on the Group menu to copy an existing application group. For example, you may want to copy a group of Ethernet test applications to another group on the DA-3x's hard disk or to a floppy disk.

To copy an application group:

1. Select the application group that you want to copy.
2. Choose Copy from the Group menu.

   The Copy Application Group dialog box (Figure 7-5) appears.

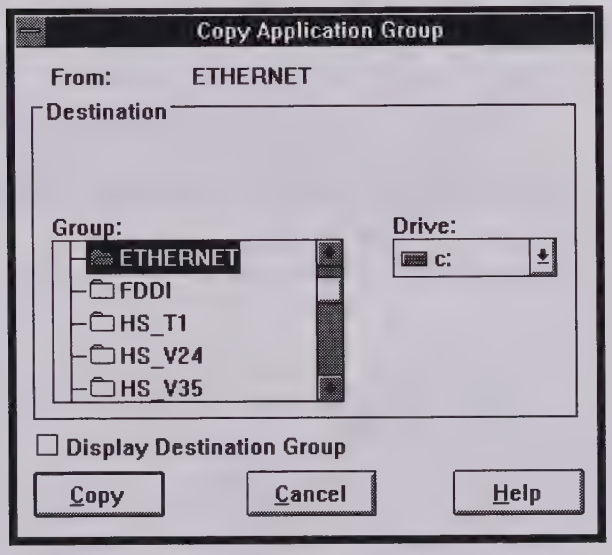


Figure 7-5 Copy Application Group

3. Select the application group you want in the Group box.
4. Move the cursor to the Drive box to select a different drive where the copy of the application group will be stored.
5. Choose the Copy button.

   Application Manager copies the application group and returns to the Application Manager screen.

7.2.4. Moving an Application Group

You can use the Move command on the Group menu to accomplish the following tasks:

- move application groups between application groups and between disk drives
- move an application group from one disk drive to another
- move an application group into another application group, thus making it a subgroup

You can only move one application group at a time.

To move an application group:

1. Select the application group that you want to move.
2. Choose Move from the Group menu.

   The Move Group dialog box (Figure 7-6) appears.

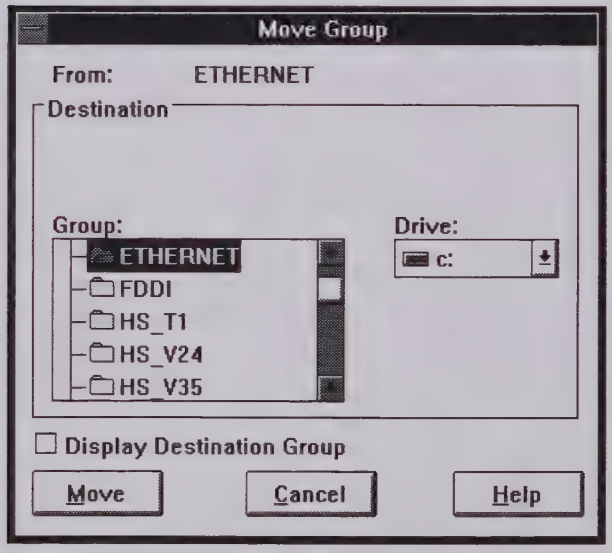


Figure 7-6 Move Group Dialog Box

3. Do one of the following:
   - To move the application group to the root group or into another application group, move the cursor to the Group box and select a different application group.
   - To move the application group to another disk drive, move the cursor to the Drive box and select a different drive.

4. Choose the Move button.

   Application Manager moves the application group to the specified location and you return to the Application Manager screen.

7.2.5. Renaming an Application Group

You can use the Rename command on the Group menu to rename an application group.

To rename an application group:

1. Select the application group that you want to rename.
2. Choose Rename from the Group menu.

   The Rename Group dialog box (Figure 7-7) appears.

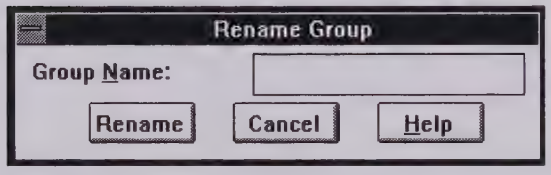


Figure 7-7 Rename Group Dialog Box

3. Type the new application group name in the Group Name box.
4. Choose the Rename button.

   Application Manager notifies you with an error message if an application group with the new name already exists. Choose the OK button and specify a different application group name.

Caution:

Do not rename any of the original WG application groups.

7.2.6. Deleting an Application Group

You can use the Delete command on the Group menu to delete an application group that you no longer need. You can only delete one application group at a time.

To delete an application group:

1. Select the application group that you want to delete.
2. Choose Delete from the Group menu.

   The Delete Application Group confirmation box appears.
3. Choose the Yes button.

Caution:

Be careful when deleting application groups. Deleting the group also deletes any applications assigned to it and you cannot recover the application group or its applications.

7.2.7. Selecting the Current Disk Drive

The Drive box indicates the current disk drive and the Group List displays the structure of the current drive. When you change to a different disk drive, the names of the applications and application groups on that drive are displayed in the Application List and Group List.

To select another disk drive:

1. Move the cursor to the Drive box.
2. Use the mouse or arrow keys to select the disk drive that you want.

   You can also press the letter for the drive that you want to select, such as A or C.

7.3. Selecting Applications

To accomplish application tasks such as running, copying, and deleting, you must first select the application. You can select a single application or several applications. When an application is selected, its name is highlighted in the Application List (Figure 7-8).

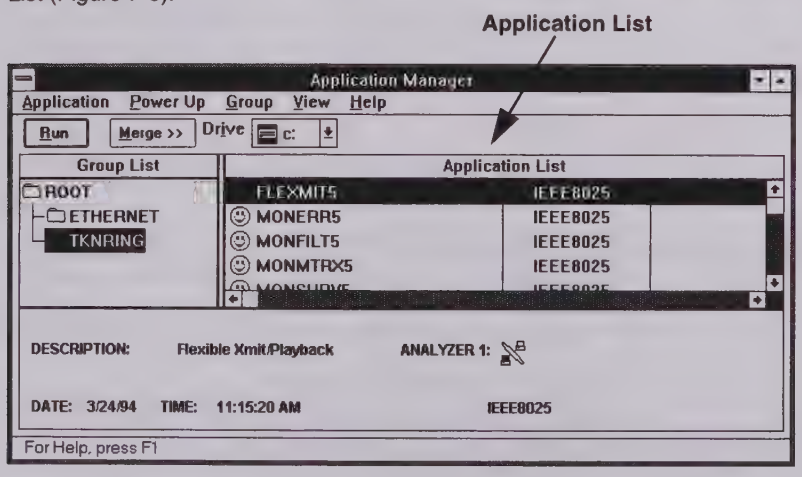


Figure 7-8 Application List

7.3.1. Selecting an Application

In the Application List, you can select a single application and then use the commands on the Application menu to work with it.

To select a single application:

1. Move the cursor to the Application List.
2. Use the mouse or the keys in Table 7-1 to select an application.

Key	Action
Up Arrow	Selects the previous application.
Down Arrow	Selects the next application.
Home	Selects the first application.
End	Selects the last application.
Page Up	Selects the application at the top of the previous screen.
Page Down	Selects the application at the top of the next screen.
Letter or Number	Selects the next application that starts with that letter or number.

Table 7-1 Application List Key Functions

7.3.2. Selecting Multiple Applications

In the Application List, you can select more than one application at a time in order to perform a task with several applications at once. For example, you may want to select several applications and move them to another application group. You can select multiple applications that appear in consecutive order, or you can select applications that are not in sequence.

To select two or more applications in sequence:

1. Move the cursor to the Application List.
2. Use the arrow keys to move the cursor to the first item that you want to select.
3. Press and hold down Shift while you use the arrow keys to highlight the additional applications that you want to select.

Shortcut:

Use the mouse to highlight the first application that you want to select. Then press and hold down Shift while you highlight the last application that you want to select.

To select two or more applications out of sequence:

1. Move the cursor to the Application List.
2. Use the arrow keys to move the cursor to the first item that you want to select.
3. Press and release Shift+F8
4. Use the arrow keys to move to each of the applications that you want to select.
5. Press the Spacebar to select each additional application.
6. Press Shift+F8 again after you have selected all of the applications that you want.

Tips:

- Hold down Ctrl while using the mouse to select each of the applications that you want.
- To select all of the applications in the current application group, press Ctrl+/.

7.3.3. Displaying an Application's Description

When you create and save a new application or combine two existing applications into a new application and save it, you have the opportunity to specify a brief description of the application (up to 30 characters). WG applications already have a description assigned to them. Displaying this brief description allows you to view more information about the purpose of the application.

To display an application's description:

1. In the Application List, select the desired application.
2. From the Application menu, choose Description.

   The Change Application Description dialog box is displayed.
3. Choose the Cancel button.

   You return to the Application Manager screen.

Tip:

You can also display application descriptions at the bottom of the screen by choosing the Description Window command on the View menu.

7.4. Running Applications

You can use the Run command on the Application menu to run a selected application. Before running an application, make sure that you have the required network interface installed in one of the DA-3x slots (4, 5, 6, or 7).

Note:

- When you run an application, the DA-3x automatically uses the default network interface that you defined on the Launch Pad screen. However, the default network interface must be the same type of network interface, such as Ethernet, that is required by the application.
- If the required network interface is not installed in one of the DA-3x's slots, Application Manager will not allow you to run the application.

To run an application:

1. Move the cursor to the Application List.
2. Select the application that you want to run. If the application that you want to run is not listed in the Application List, locate it by doing one or more of the following:
   - in the Group List box, select a new application group
   - in the Drive box, select a new drive
3. Choose Run from the Application menu.

Shortcut:

Use the mouse to double-click on the name of the application.

Application Manager lists the last four applications that you used at the bottom of the Application menu. You can run one of these applications again by choosing it from the menu.

To run a recently used application:

- Choose the name or number of the application that you want from the bottom of the Application menu.

7.5. Creating and Modifying Applications

Create Application allows you to create a new application by using the New command on the Application menu. You can load an existing application with the Load command on the Application menu and then make changes to it.

When you create an application or modify an existing application, you can specify the setup information including:

- analyzer configuration
- network interface

- disk or RAM capturing
- protocols loaded on the protocol stack

See Chapter 8 Create Application for more information on creating and modifying applications.

7.5.1. Creating an Application

You can use the Create command on the Application menu or the Create App button on the Launch Pad to create a new application.

To create a new application:

1. Do one of the following:
   - choose the Create Application task button from the Launch Pad screen
   - choose Create from the Application menu on the Application Manager screen

The Create Application screen (Figure 7-9) appears.

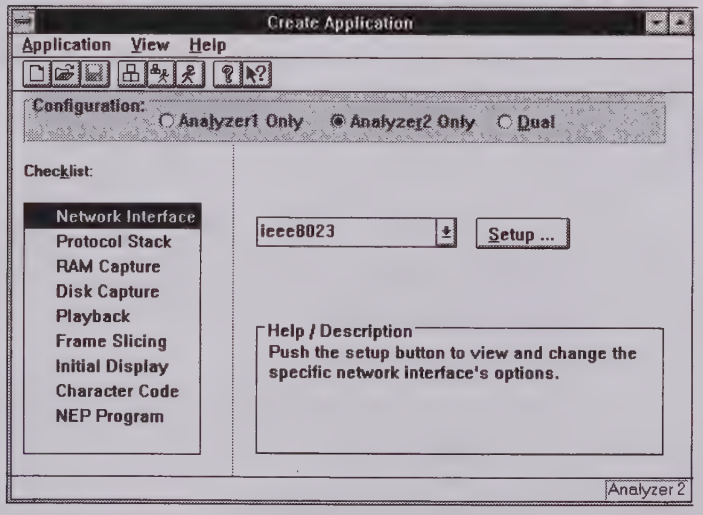


Figure 7-9 Create Application Screen

2. Select the Analyzer Configuration: Analyzer 1 Only, Analyzer 2 Only, or Dual Analyzer.
3. Complete the setup for the desired options.

   You must select a network interface, but all of the other setup options are optional.
4. Save and Run your new application.

7.5.2. Modifying an Existing Application

To modify an existing application:

1. Select the application that you want to modify from the Application List box.
2. Choose Modify from the Application menu.

   The Create Application screen (Figure 7-8) appears.
3. Make any desired changes to the application, such as RAM capture setup, frame slicing, or protocols loaded on the protocol stack.
4. Choose Save from the Application menu.

Notes:

- When you alter the setup or code of a WG application it may produce unpredictable results and make it difficult for WG to help you in subsequent troubleshooting. Therefore, save any altered WG application under a different name
- If you modify a WG application, for example, by altering the loaded protocols or disk capturing, you must make corresponding changes to the application's Network Event Program. If you do not make these changes, the application may produce unpredictable results.
- Adding protocols to a WG application may adversely affect performance.
- When you modify a WG application, it must be recompiled before it will run. You can compile it from the Application menu in Create Application before running it or it will automatically be compiled when you run it from the Application menu in Application Manager.

To modify an existing application and save the changes to a new application:

1. Select the application that you want to modify from the Application List box.
2. Choose Modify from the Application menu.

   The Modify Application screen (Figure 7-9) appears.
3. Make any desired changes to the application, such as RAM capture setup, frame slicing, or protocols loaded on the protocol stack.
4. Choose Save As from the Application menu.

   The Save Application dialog box (Figure 7-10) appears.

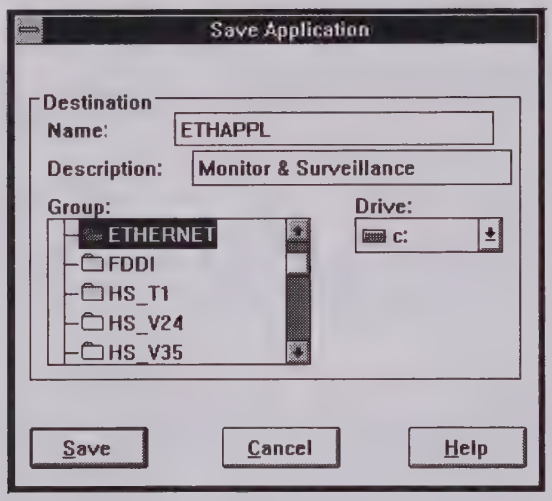


Figure 7-10 Save Application Dialog Box

5. Type the new name for the application in the Name box.
6. Type a brief description of the application in the Description box.
7. In the Group box, select the application group where you want the DA-3x to save the application.
8. In the Drive box select the disk drive where you want the DA-3x to save the application.
9. Choose the Save button.
10. Do one of the following:
    - run the new application by choosing Run from the Application menu
    - clear the new application from the DA-3x RAM by choosing Clear from the Application menu
    - return to the Application Manager screen by choosing Exit from the Application menu

7.6. Copying and Moving Applications

You can use the Copy command on the Application menu to copy an existing application to a different application group or disk drive. This is helpful when you want to create a new application that is similar to an existing application. Instead of creating the new application from the beginning, you can copy the existing application and then make any necessary changes.

To copy an application:

1. Select the application that you want to copy.
2. Choose Copy from the Application menu.

   The Copy Application (Figure 7-11) dialog box appears.

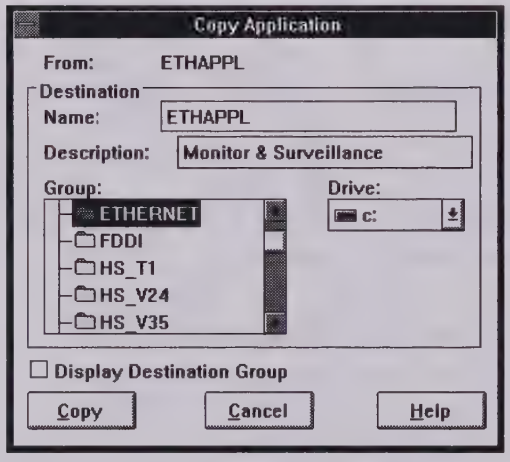


Figure 7-11 Copy Application Dialog Box

3. Do one or more of the following, if desired:
   - To change the name of the application, type the new application name in the Destination Name box.
   - To change the application description, move the cursor to the Description box and type in the new description.
   - To change the application group where the application will be stored, move the cursor to the Group box and select a different application group.
   - To change the drive where the application will be stored, move the cursor to the Drive box and select a different drive.
4. Choose the Copy button.

Note:

To copy an application to a new application group, you must first create the application group before copying the application.

To copy multiple applications:

1. Select the applications that you want to copy.
2. Choose Copy from the Application menu.

   The Copy Multiple Applications (Figure 7-12) dialog box appears.

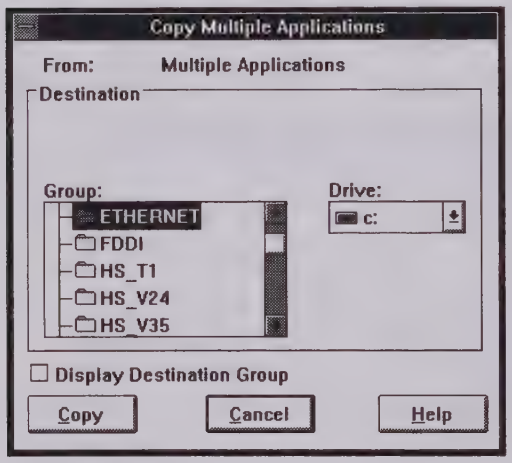


Figure 7-12 Copy Multiple Applications Dialog Box

3. Do one of the following, if desired:
   - To copy the selected applications to another application group, move the cursor to the Group box and select a different application group.
   - To copy the selected applications to another disk drive, move the cursor to the Drive box and select a different drive.
4. Choose the Copy button.

You can move applications between application groups and between disk drives by using the Move command on the Application menu. You can move one application at a time or you can move a selected group of applications at the same time.

To move an application:

1. Select the application that you want to move.
2. Choose Move from the Application menu.

   The Move Application (Figure 7-13) dialog box appears.

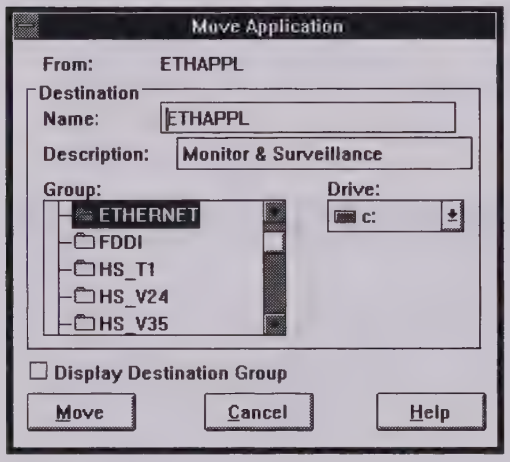


Figure 7-13 Move Application Dialog Box

3. Do one of the following, if desired:
   - To change the name of the application, type the new application name in the Destination Name box.
   - To change the application description, move the cursor to the Description box and type in the new description.
   - To change the application group where the application will be stored, move the cursor to the Group box and select a different application group.
   - To change the drive where the application will be stored, move the cursor to the Drive box and select a different drive.
4. Choose the Move button.

Note:

To move an application to a new application group, you must first create the application group before moving the application.

To move multiple applications:

1. Select the applications that you want to move.
2. Choose Move from the Application menu.

   The Move Multiple Applications (Figure 7-14) dialog box appears.

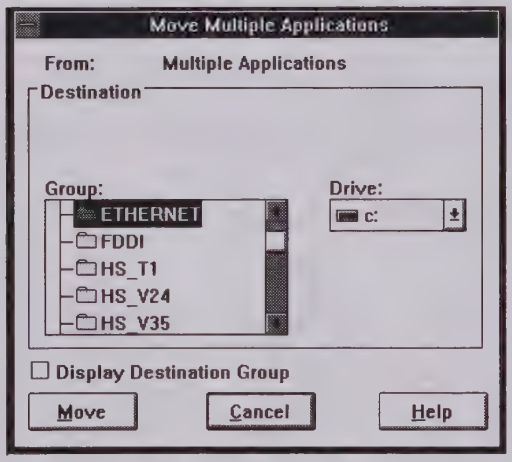


Figure 7-14 Move Multiple Applications Dialog Box

3. Do one of the following, if desired:
   - To move the selected applications to another application group, move the cursor to the Group box and select a different application group.
   - To move the selected applications to another disk drive, move the cursor to the Drive box and select a different drive.
4. Choose the Move button.

7.7. Renaming Applications

You can use the Rename command on the Application menu to rename an existing application. This is helpful when you realize that the name assigned to an application is hard to remember or is not meaningful. It is also very important to rename any WG applications that you modify.

To rename an application:

1. Select the application that you want to rename.
2. Choose Rename from the Application menu.

   The Rename Application dialog box (Figure 7-15) appears.

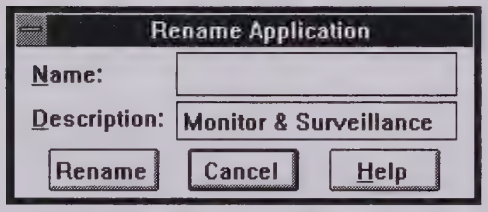


Figure 7-15 Rename Application Dialog Box

3. Type the new application name in the Name box.
4. Move the cursor to the Description box to type in a new application description.
5. Choose the Rename button.

   If an application with the new name already exists, Application Manager asks if you want to overwrite the existing file. Choose the OK button to write over it or choose the Cancel button to specify a different application name.

7.8. Deleting Applications

You can use the Delete command on the Application menu to delete unwanted applications. You can delete one application at a time or you can delete a selected group of applications at the same time.

Caution:

Be careful when deleting applications. You cannot recover applications deleted accidentally.

To delete an application:

1. Select the application that you want to delete.
2. Choose Delete from the Application menu.
3. Choose the Yes button from the Delete Application confirmation box

To delete multiple applications:

1. Select the applications that you want to delete.
2. Choose Delete from the Application menu.
3. Choose the Yes to All button on the Delete Multiple Applications confirmation box.

7.9. Merging Applications

If your DA-3x contains two protocol analyzer modules, you can load two different applications (one for each analyzer) and run both of them at the same time. You can also save the combined applications as a new application, if you want to use the same combination again.

Use the Merge command on the Application menu to combine two existing applications. When you choose this command, the Application Manager screen changes to display a Group List and an Application List for each of the analyzers. This allows you to select, load, and configure a different application for each analyzer to create a combined application.

7.9.1. Combining Two Existing Applications

If your DA-3x is configured to use two analyzer modules, you can load one application for each analyzer and run both of them at the same time. If you want to use the same combination again, you can save the combined applications as one new application.

To combine two existing applications:

1. Choose Merge from the Application menu.

   A Group List and Application List (Figure 7-16) for each analyzer appears.

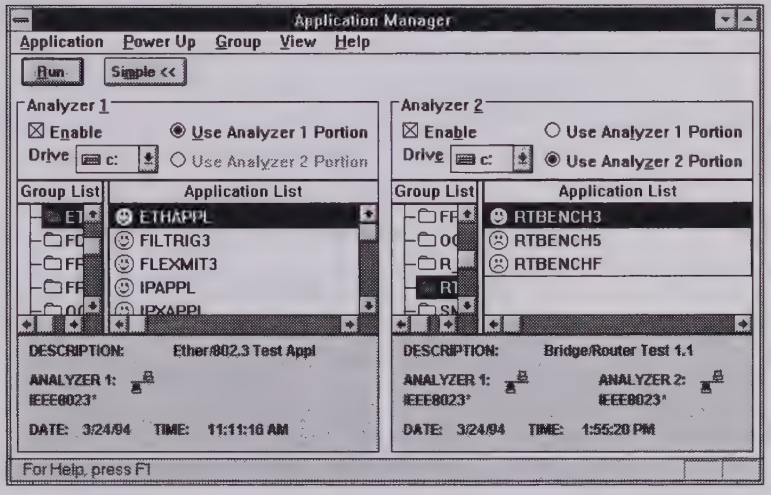


Figure 7-16 Merge Group and Application Lists

2. In the Analyzer 1 section, select the application that you want to run on the analyzer in slot 2.
3. If the application that you want to select is not listed in the Application List, locate it by doing one or more of the following:
   - in the Group List box, select a new group
   - in the Drive box, select a new drive
4. In the Analyzer 2 section, select the application that you want to run on the analyzer in slot 3.
5. If the application that you want to select is not listed in the Application List, locate it by doing one or more of the following:
   - in the Group List box, select a new group
   - in the Drive box, select a new drive

6. If you want to be able to use this combination of applications again, save it as a new application.
7. Do one of the following:
   - from the Application menu, choose Run
   - choose the Run button

7.9.2. Selecting the Analyzer Portion of an Application

When combining two existing applications, if you select a dual-analyzer application, you can use either the Analyzer 1 portion or the Analyzer 2 portion of the application by selecting the corresponding option.

Dual-analyzer applications contain an analyzer portion for each analyzer. When you select a dual-analyzer application, the default analyzer portion is selected, but you can select either analyzer portion.

To select the analyzer portion of an application:

1. Select the application that you want to run from the Application List.
2. Select either:
   - the Use Analyzer 1 Portion option
   - the Use Analyzer 2 Portion option

Note:

When you create a combined application you can run the Analyzer 1 portion on the analyzer in slot 3 and the Analyzer 2 portion on the analyzer in slot 2.

7.9.3. Enabling or Disabling an Analyzer for an Application

When you combine two existing applications or select a dual-analyzer application, the Enable checkbox in the analyzer section of the Application Manager screen allows you to enable or disable the corresponding analyzer before running the application.

To enable or disable an analyzer for an application:

♦ Select the Enable checkbox from the analyzer section of the Application Manager screen to:
   - toggle the check mark on and enable the analyzer
   - toggle the check mark off and disable the analyzer

7.9.4. Saving Combined Applications

When you combine two existing applications, you can save the combined applications as a new application. This allows you to use the same combination of applications again by simply running the new application.

When you save a combined application for the first time, the Application Manager displays the Save Application dialog box so that you can:

- name the application
- specify a description
- select the disk drive and application group where you want to store the application.

To save combined applications as a new application:

1. Select the applications that you want to run for each analyzer and if necessary, select which analyzer portion of the applications that you want to use.
2. Choose Save from the Application menu.

   The Save Application dialog box (Figure 7-17) appears.

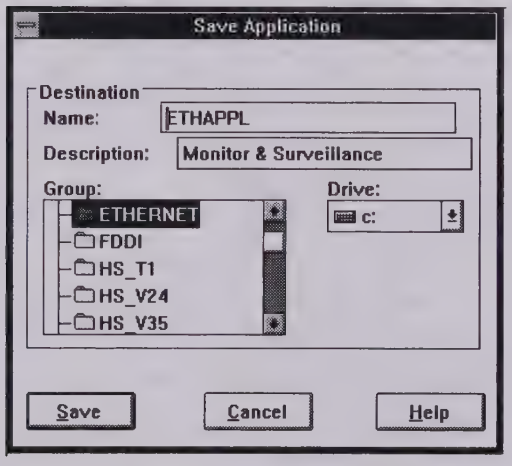


Figure 7-17 Save Application Dialog Box

3. Type the name for the new application in the Destination Name box.
4. Type a brief description of the application (up to 30 characters) in the Description box.
   - To change the application group where the new application will be stored, move the cursor to the Group box and select a different application group.
   - To change the drive where the new application will be stored, move the cursor to the Drive box and select a different drive.

7.9.5. Using the Simple Command

To return to the standard Application Manager screen to load individual applications after combining two existing applications:

♦ Use the Simple command on the Application menu.

7.10. Using a Power Up Application

The Application Manager allows you to assign a power-up application that will automatically run whenever you start up or reboot the DA-3x. This is helpful for the following situations:

- you have a specific application that you want to run every time you start up the DA-3x, such as a monitoring application
- you need to run the same application at different locations

Each time that you move the DA-3x and connect to a different network or a different point on the same network, you can run the same application when you start up the DA-3x. You avoid having to go to the Application Manager screen to select and load the application.

If you have previously assigned a power-up application, but you no longer want this application to run every time that you start up the DA-3x, then you can clear the power-up application. This option is useful when you want to select a different power-up application or when you do not want to have any application run at startup.

To assign a power-up application:

1. Select the application that you want to be the power-up application.
2. Choose Assign from the Power Up menu.
3. From the Assign Powerup dialog box, select one of the following:
   - Use Application Setting

     The power-up application will run using the network interface setup defined in the application.
   - Use Launch Pad Setting

     The power-up application will run using the network interface setup defined from the Launch Pad screen.
4. Choose the Yes button.

To clear the currently assigned power-up application:

1. Select the application that you want to clear from power-up application.
2. Choose Clear from the Power Up menu.
3. Choose the Yes button from the Clear Power Up Application confirmation box.

7.11. Application Manager Menu Reference

The Application Manager menu is illustrated in Figure 7-18:

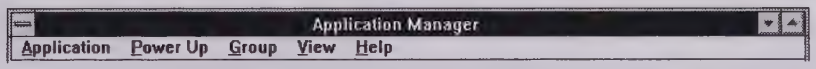


Figure 7-18 Application Manager Menu

7.11.1. Application Menu

The Application menu includes the commands described in Table 7-2.

Menu Item	Function
Run	Runs selected application.
Modify	Modifies an existing application.
Create	Creates a new application.
Copy	Copies one or more existing applications to a different application group or disk drive.
Rename	Renames an existing application.
Delete	Deletes one or more unwanted applications.
Move	Moves one or more applications from one location to another.
Merge/Simple	Merge combines two existing applications. Simple returns to the standard Application Manager screen for loading individual applications.
Save	Saves the new combined application after combining two existing applications.
1,2,3,4 command	Lists the numbers and filenames of the last four applications that you closed at the bottom of the Application menu.
Exit	Exits the Application Manager.

Table 7-2 Application Menu Item Functions

7.11.2. Power Up Menu

The Power Up menu includes the commands described in Table 7-3.

Menu Item	Function
Assign	Selects an application to run automatically when you start up the DA-3x.
Clear	Clears the currently assigned power-up application.

Table 7-3 Power Up Menu Item Functions

7.11.3. Group Menu

The Group menu includes the commands described in Table 7-4.

Menu Item	Function
Create	Creates a new application group.
Copy	Copies an existing application group.
Delete	Deletes an unwanted application group.
Rename	Renames an existing application group.
Move	Moves an application group from one location to another,, between application groups and between disk drives.

Table 7-4 Group Menu Item Functions

7.11.4. View Menu

The View menu includes the commands described in Table 7-5.

Menu Item	Function
Status Bar	Displays or hides information about the currently highlighted application at the bottom of the Application Manager screen.
Name Only	Displays the network interface information or just the names of the available applications.
Description Window	Displays or hides additional information about the currently highlighted application including a description of the application, the network interface required by each analyzer, and the date and time that the application was last saved.

Table 7-5 View Menu Item Functions

7.11.5. Help Menu

The Help menu includes the commands described in Table 7-6.

Menu Item	Function
Contents	Displays the table of contents for Help.
Using Help	Displays information on accessing on-line help on the DA-3x for Windows.
About Application Manager...	Displays version number and copyright information for the Application Manager software.

Table 7-6 Help Menu Item Functions

8. Create Application

An application is software used by the DA-3x to test network hardware and software, monitor traffic for error conditions, solve network problems and, in general, keep a network tuned for maximum performance.

You can create your own applications, based on what you know about your network and about DA-3x configuration. Create Application allows you to create new applications and modify existing applications. You can specify setup information such as analyzer configuration, network interface, disk capturing, and the protocols loaded on the protocol stack.

To start Create Application:

- Do one of the following:
  - Choose Create Appl from the Launch menu.
  - Choose Create from the Application menu on the Application Manager screen.
  - Choose the Setup button on the Configure Single Button dialog box.

The Create Application screen (Figure 8-1) appears.

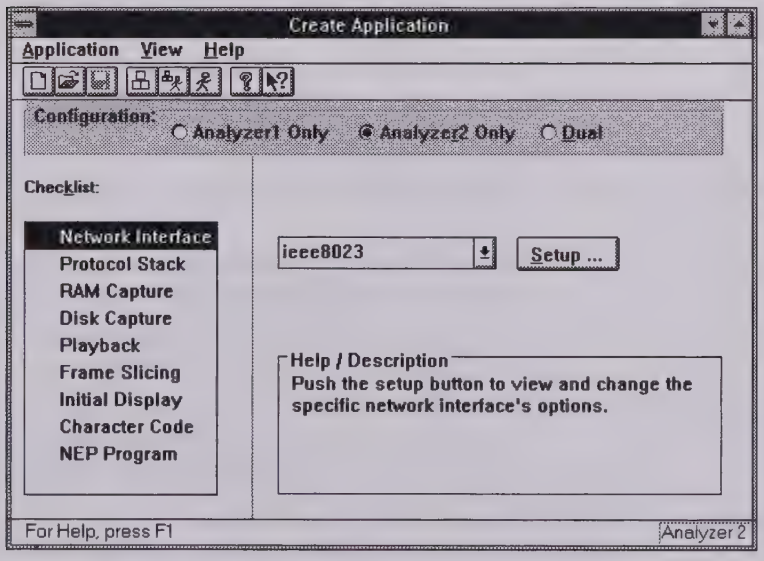


Figure 8-1 Create Application Screen

Shortcut:

Choose the Create Appl button on the Launch Pad.

8.1. Creating a New Application

You can create a new application using one, two or both (dual) analyzers and any of the parameters on the Create Application screen.

To create an application:

1. Choose New from the Application menu.
2. Select the Analyzer Configuration from the Create Application screen: Analyzer 1 Only, Analyzer 2 Only, or Dual Analyzer.
3. Complete the setup for the desired options. You must select a network interface, but all of the other setup options are optional.
4. Save and run your new application.

8.1.1. Saving a New Application

After you have set up all the parameters for a new application, use the Save or Save As commands to save it.

To save a new application:

1. From the Application menu, choose Save As.

   The Save Application dialog box appears.
2. In the Destination Name box, type the name for the new application.
3. In the Description box, type in a brief description of the application (up to 30 characters).
4. To change the application group where the new application will be stored, move the cursor to the Group box and select a different application group.
5. To change the drive where the new application will be stored, move the cursor to the Drive box and select a different drive.
6. Choose the Save button.

   Create Application saves the new application and fowards it to the Modify Application screen where you can run it or modify it.

8.1.2. Displaying an Application's Description

When you create and save a new application, you have the opportunity to specify a brief description of the application (up to 30 characters). WG applications already have a description assigned to them. Displaying this brief description allows you to view more information about the purpose of the application.

To display an application's description:

1. From the Application menu, choose Load.
2. Highlight the desired application.

   The description is displayed in the bottom area of the screen in the Description field.

To change an application's description:

1. Highlight the desired application.
2. From the Application menu, choose Description.

   The Change Application Description dialog box is displayed.
3. Do one of the following:
   - To keep the current description, choose the Cancel button.
   - To change the description, choose OK.

     The description is displayed in the bottom area of the screen in the Description field.

8.1.3. Compiling and Running a New Application

Once you have saved a new or modified application, you will want to compile and run it.

To compile and run a new application:

1. Choose Run from the Application menu.

   The DA-3x begins compiling the application and displays the Application Compiler dialog box
2. If the DA-3x prompts you to confirm the specified network type, do one of the following:
   - to accept the specified network type, choose the OK button
   - to change the network type, choose the desired option and then choose the OK button

     The DA-3x displays the Real Time screen.

8.2. Modifying an Existing Application

You can modify an existing application by changing the setup, such as network interface or frame slicing. You can save the changes to the same application or you can save the modified application as a new application.

You can modify an application that you've assigned to an application button on the Launch Pad by choosing the Setup button on the Configure Single Button dialog box.

To modify an existing application:

1. Choose Load from the Application menu.

   The Load Application dialog box (Figure 8-2) appears.

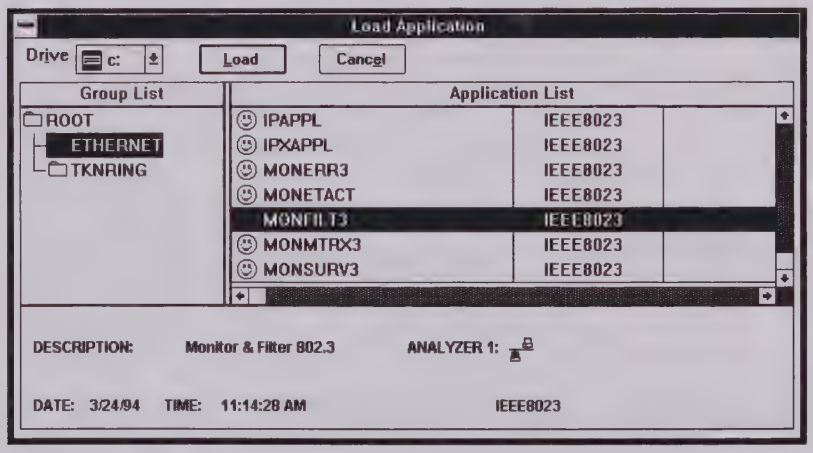


Figure 8-2 Load Application Dialog Box

2. Select the application that you want to load.

   If the application that you want to load is not listed in the Application List, locate it by doing one or more of the following:

   - in the Group List box, select a new application group
   - in the Drive box, select a new drive

3. Choose the Load button.

   The DA-3x loads the selected application and displays the Modify Application (Figure 8-1) screen.

4. Make any desired changes to the application.
5. Save and run the modified application.

Note:

For character-based DA-3x applications, you must use the Convert Application utility to convert the application to run under the DA-3x for Windows software.

To save an application or a modified application as a new application:

1. Choose Save or Save As from the Application menu.

   The Save Application dialog box (Figure 8-3) appears.

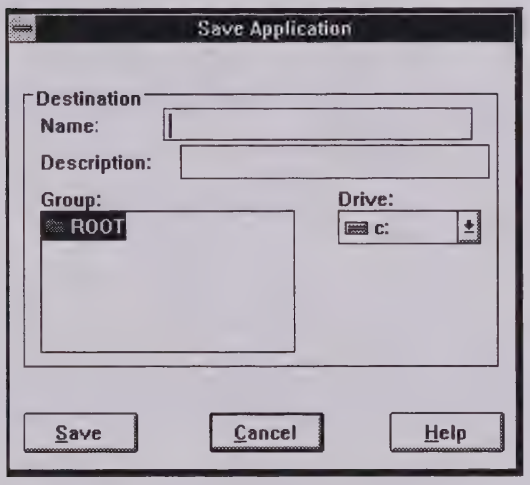


Figure 8-3 Save Application Dialog Box

2. Type the name for the new application in the Destination Name box.
3. Type a brief description of the application (up to 30 characters) in the Description box.
4. To change the application group where the new application will be stored, move the cursor to the Group box and select a different application group.
5. To change the drive where the new application will be stored, move the cursor to the Drive box and select a different drive.
6. Choose the Save button.

8.2.1. Changing an Application's Description

When you create and save a new application or combine two existing applications into a new application and save it, you have the opportunity to specify a brief description of the application (up to 30 characters). WG applications already have a description assigned to them. This brief description provides more information about the purpose of the application.

You can change an application's description to make it more descriptive or you can add a description to an application that doesn't already have one.

To change an application's description:

1. In the Application List, select the desired application.
2. From the Application menu, choose Description.

   The Change Description dialog box is displayed.
3. Do one of the following:
   - To change the entire description, type in the new description.
   - To edit the description, use the arrow keys to move to the appropriate position and edit the text.
4. Choose the OK button.

   The application's description is changed and you return to the Application Manager screen.

8.2.2. Adding a Description to an Application

You can add a brief description, up to 30 characters, to a previously created application. This brief description provides more information about the purpose of the application.

To add a description to an existing application:

1. In the Application List, select the desired application.
2. From the Application menu, choose Description.

   The Change Application Description dialog box is displayed.
3. Type in the new description.
4. Choose the OK button.

   The application's new description is added and you return to the Application Manager screen.

8.3. Selecting the Analyzer Configuration

The DA-3x can run single-analyzer applications or dual-analyzer applications, provided that there are two analyzer modules installed. You can run single-analyzer applications using either one of the analyzer modules.

When you create a new application or modify an existing application, the Configuration section of the Create Application screen allows you to specify which analyzer or analyzers to use when running the application. You can use Analyzer 1 only, Analyzer 2 only, or both analyzers (Dual).

To select the analyzer configuration:

1. Move the cursor to the Configuration section of the Create Application screen.
2. Choose one of the configuration options:
   - Analyzer 1 Only
   - Analyzer 2 Only
   - Dual

Note:

If you choose Dual as the analyzer configuration, an additional section appears on the screen that allows you to switch between Analyzer 1 setup and Analyzer 2 setup.

8.4. Setting Up the Network Interface

When you create an application, you must select the network interface over which the application will run. After you select a network interface, you can specify network interface specific options such as network type, ring rate, or line speed. The options that you can set vary depending on the network interface. See on-line help for the network interface you are setting up.

To set up a network interface:

1. Choose Network Interface from the Checklist.

   The Network Interface Setup (Figure 8-4) appears.

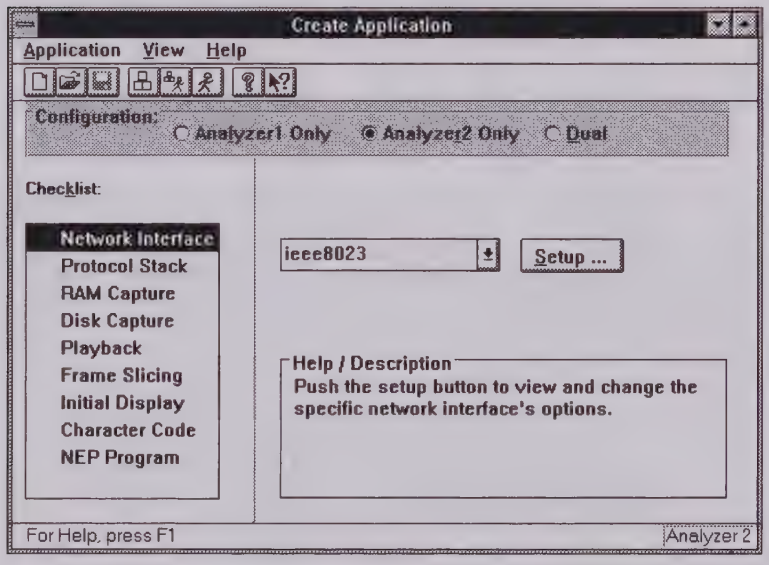


Figure 8-4 Network Interface Setup

2. Choose the network interface that you want to use in the Network Interface box.
3. Choose the Setup button to set up the selected network interface.

   The network interface-specific setup dialog box appears.
4. Make any desired changes to the setup information and choose the OK button.

8.5. Setting Up the Protocol Stack

Create Application allows you to load protocols on the protocol stack at their default layer or at any layer that you choose. This is controlled by the Custom Stack feature as follows:

- when this feature is disabled, you can only select protocols to load at their default layer
- when this feature is enabled, you can load any protocol at any layer

The protocols that you set up in an application using Create Application will remain until you use Create Application to change them. However, you can temporarily alter the setup when you run Real Time from another application, such as Monitor or Capture.

Note:

For LAN traffic, the DA-3x decodes all protocols regardless of whether the protocols are loaded on the protocol stack, provided that the protocol software is installed on the DA-3x. However, for WAN traffic, you must specify which protocols need to be decoded at each layer of the protocol stack.

8.5.1. Loading a Protocol on the Stack

To load a protocol on the protocol stack:

1. Choose Protocol Stack from the Checklist.

   The Protocol Stack Setup (Figure 8-5) appears.

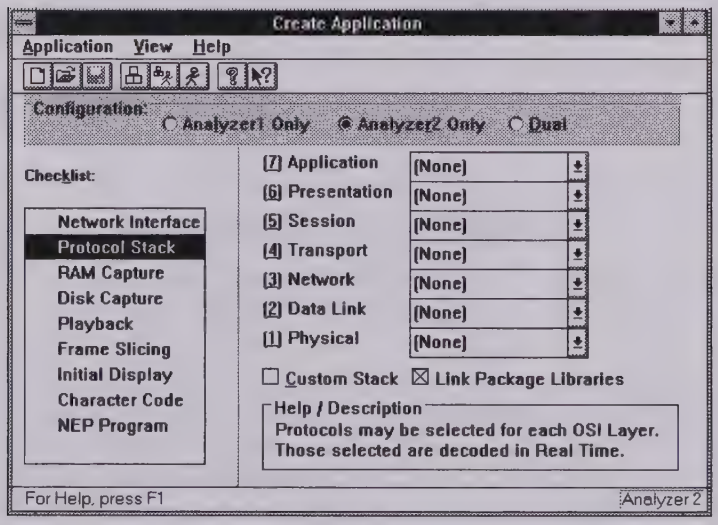


Figure 8-5 Protocol Stack Setup

2. Do one of the following:
   - To load a protocol at any layer, choose the Custom Stack checkbox to enable the custom stack feature.
   - To load at the default layer, choose the Custom Stack checkbox to disable the custom stack feature.
3. If you are compiling a custom-made application, choose the Link Package Libraries checkbox in order to use keywords successfully.

   If you are not compiling a custom-made application, do not choose the Link Package Libraries checkbox and the application will compile more quickly.
4. Move the cursor to the layer where you want to load the protocol.
5. Use the Up Arrow or Down Arrow to scroll through the list of available protocols and select the protocol that you want to load.

   If the selected protocol has a Setup button, then choose the Setup button and make any necessary changes to the protocol setup.

8.5.2. Setting Up a Protocol

For a few selected protocols, such as GLUE, HDLC, and SDLC, a Protocol Setup dialog box is available that allows you to determine how the DA-3x interacts with the protocol software.

To set up a protocol:

1. Choose Protocol Stack from the Checklist.

   The Protocol Stack Setup (Figure 8-5) appears.
2. Load the desired protocol on the protocol stack.

   If a Setup button is available, it appears next to the layer protocol box.
3. Choose the Setup button.

   The Protocol Setup dialog box (Figure 8-6) appears.

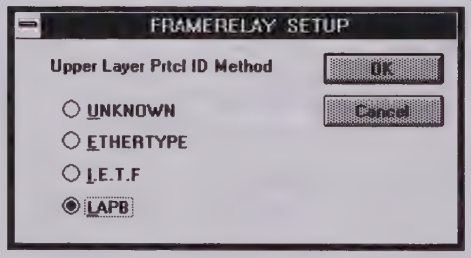


Figure 8-6 Sample Protocol Setup Dialog Box

4. Make any necessary changes to the protocol setup.

5. Choose the OK button.

   You return to the Protocol Stack Setup.

For information on setting up a specific protocol, refer to the on-line help for that protocol.

Decoding Proprietary Protocols

You can obtain accurate protocol decodes at all layers, even when proprietary protocol information is present, by using the Glue protocol software. It enables you to define fields that account for the bytes occupied by the proprietary protocol. Glue enables the DA-3x to perform a decode on the intervening protocol encapsulation. Protocols loaded at succeeding layers can then be decoded accurately and the software displays decode information in the Protocol Summary and Protocol Detail windows for the fields you have defined.

You can specify the label used to identify the field in the Protocol Summary and Protocol Detail windows. You can also specify the length of the field, the format used for displaying the field contents, whether or not the next protocol is detected based on the Ethertype value, and whether or not the bytes of the field are swapped for decoding.

The Glue Protocol Definition dialog box allows you to define the protocol to be decoded by the Glue protocol software. You can access the Glue Protocol Definition dialog box from either the Protocol Stack Setup on the Advanced Setup dialog box on the Create Application screen or the Modify Protocol Stack dialog box available from the Capture, Monitor, Real Time or Examine screens.

To access the Glue Protocol Definition dialog box:

1. From either the Protocol Stack Setup or the Modify Protocol Stack dialog box, load Glue at the desired layer of the protocol stack where the proprietary protocols reside.

   The Setup button appears next to the layer box where you loaded Glue.

2. Choose the Setup button.

   The Glue Protocol Definition dialog box is displayed.

3. Define the fields that make up the protocol that you want to decode.

4. Choose the OK button.

   Your changes are saved and you return to either the Protocol Stack Setup or the Modify Protocol Stack dialog box.

Note:

The alternative way to indicate which protocol follows the Glue protocol is to enable the Ethertype checkbox when you define a protocol field. If you specify the next layer protocol and enable the Ethertype option, the next-layer-protocol specification takes precedence.

The default Next Layer Protocol selection is None. If you choose None or Unknown, the Ethertype specification is used. If you select Unknown and have

not enabled the Ethertype option, the DA-ex will attempt to decode according to the stack specification.

8.6. Setting Up Disk Capturing

The disk capturing feature allows you to capture network traffic and store it in a capture file on the DA-3x hard disk. When you run this application, a Capture dialog box appears that allows you to pause, stop, or reset. The dialog box also displays and updates the number of frames and number of bytes captured until the disk is full.

8.6.1. Specifying a File for Disk Capturing

When you enable the disk capturing feature as part of an application, you must specify the path and name of the capture file where you want the captured network traffic to be stored.

To specify a file for disk capturing:

1. Choose Disk Capture from the Checklist.

   The Disk Capture Setup (Figure 8-7) appears.

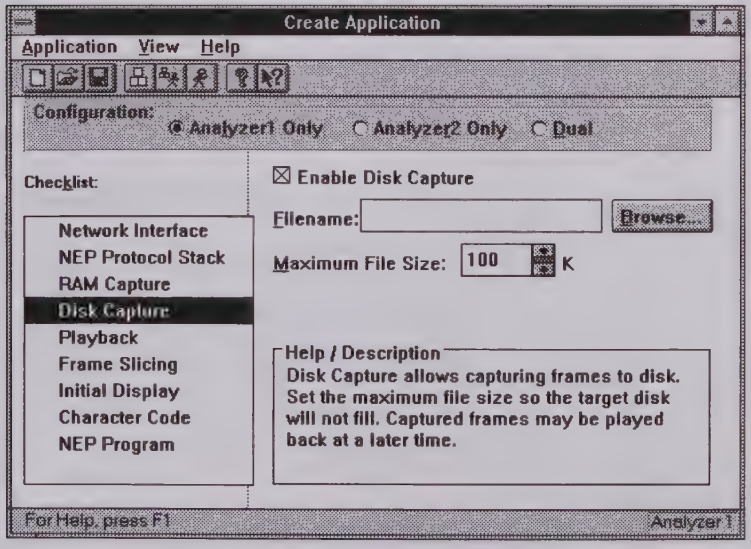


Figure 8-7 Disk Capture Setup

2. Choose the Enable checkbox to enable disk capturing.
3. Choose the Browse button to specify the path and name of the capture file.

The Open Disk Capture File dialog box (Figure 8-8) appears.

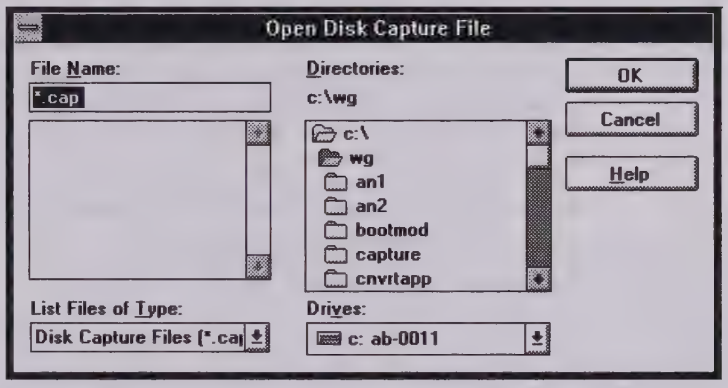


Figure 8-8 Open Disk Capture File Dialog Box

4. Select the capture file that you want to use.

   If the capture file that you want to use is not listed in the Filename box, locate it by doing one or more of the following:

   - in the Drive box, select a different drive
   - in the Directories box, select a different directory
   - in the List Files of Type box, select All Files

5. Choose the OK button.

   You return to the Create Application screen and the selected capture file is specified in the Filename box.

Tip:

If you know the path and name of the capture file that you want to use or create, type this information in the Filename box.

To create a new capture file for disk capturing:

1. Choose Disk Capture from the Checklist.

   The Disk Capture Setup (Figure 8-7) appears.

2. Choose the Enable Disk Capture checkbox to enable disk capturing.
3. Enter the path and new filename in the Filename box.
4. Choose the file size in the Maximum File Size box.

   The new capture file will not appear until you run Capture.

8.6.2. Selecting the Maximum File Size for Disk Capturing

When you enable the disk capturing feature as part of an application, you must specify the maximum size for the capture file where you want the captured network traffic to be stored. The size of the capture file can be as small as 6 KB or as large as 32 MB. The size of the capture file is limited by the amount of available space on the DA-3x hard disk.

To select the maximum file size for disk capturing:

1. Choose Disk Capture from the Checklist.

   The Disk Capture Setup (Figure 8-7) appears.

2. Choose the Enable checkbox to toggle the checkbox on and enable disk capturing.

3. Type the desired maximum file size in the Maximum File Size box.

Tip:

Use the mouse to increase or decrease the maximum size of the disk capture file by clicking on the Up or Down buttons next to the Maximum File Size box.

8.6.3. Enabling or Disabling Disk Capturing

Once you have specified the name of the capture file and the maximum file size for disk capturing, you may find that you need to disable disk capturing. From the Disk Capture Setup, you can disable disk capturing without losing the specified capture file or maximum file size. Then you can enable disk capturing if you want to use it at a later time.

To enable or disable disk capturing:

1. Choose Disk Capture from the Checklist.

   The Disk Capture Setup (Figure 8-7) appears.

2. Choose the Enable checkbox to toggle the checkbox on or off.

   - If the Enable checkbox is empty, the Filename and Maximum File Size boxes are also empty and disk capturing is disabled.
   - If a check mark appears in the Enable checkbox, disk capturing is enabled. The specified capture file and maximum file size are displayed.

8.7. Setting Up RAM Capturing

The RAM capturing feature allows you to capture network traffic and store it in the DA-3x RAM. You must specify the size of the capture buffer which is defined as a percentage of the DA-3x available RAM.

8.7.1. Specifying the Buffer Size for RAM Capturing

The actual size of the available memory, for options other than MIN, is determined by the amount of RAM installed on the analyzer. The analyzer RAM is shared by the capture buffer and the DA-3x operating software, which requires at least 500 KB to perform analysis tasks. This leaves the remaining RAM for capture buffer use. For example, if your DA-3x has 4 MB of analyzer RAM and you select 100% as the RAM Capture Size, then the size of the capture buffer is 3.5 MB.

To select the maximum size for RAM capturing:

1. Choose RAM Capture from the Checklist.

   The RAM Capture Setup (Figure 8-9) appears.

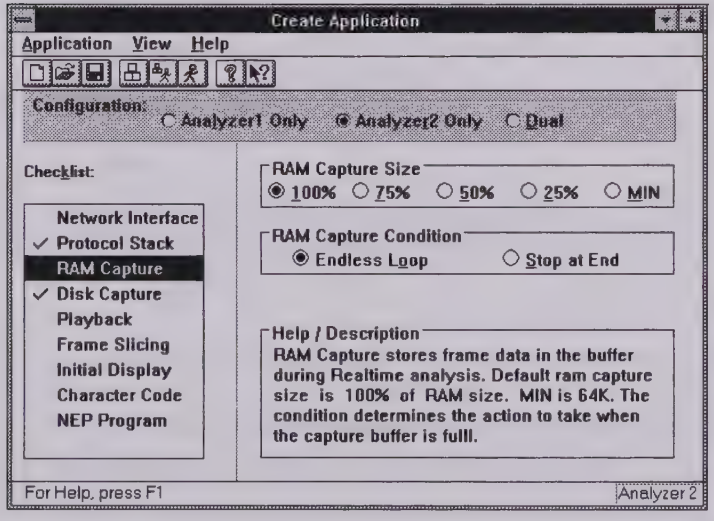


Figure 8-9 RAM Capture Setup

2. Move the cursor to the RAM Capture Size box.

3. Choose one of the RAM Capture Size options:
   - 100%
   - 75%
   - 50%
   - 25%
   - Minimum (64 KB)

   The default RAM Capture Size is 100%.

8.7.2. Selecting the Stop Condition for RAM Capturing

The stop condition for RAM capturing controls how the DA-3x responds when it reaches the specified capture buffer size. The DA-3x can either stop capturing network traffic to the capture buffer or it can overwrite the existing capture buffer starting at the beginning of the buffer.

To select the stop condition for RAM capturing:

1. Choose RAM Capture from the Checklist.

   The RAM Capture Setup (Figure 8-9) appears.
2. Move the cursor to the Stop Condition box.
3. Choose one of the Stop Condition options:
   - Endless Loop
   - Stop At End

   The default stop condition is Endless Loop.

8.8. Setting Up the Playback of a Capture File

The playback feature allows you to play back network traffic from a capture file as if it were live network traffic. This is useful when you have captured network traffic and you want to view the same traffic using an application. When you enable the playback feature as part of an application, you must specify the path and name of the capture file that you want to play back.

To select a capture file to play back onto the network:

1. Choose Playback from the Checklist.

   The Playback Setup (Figure 8-10) appears.

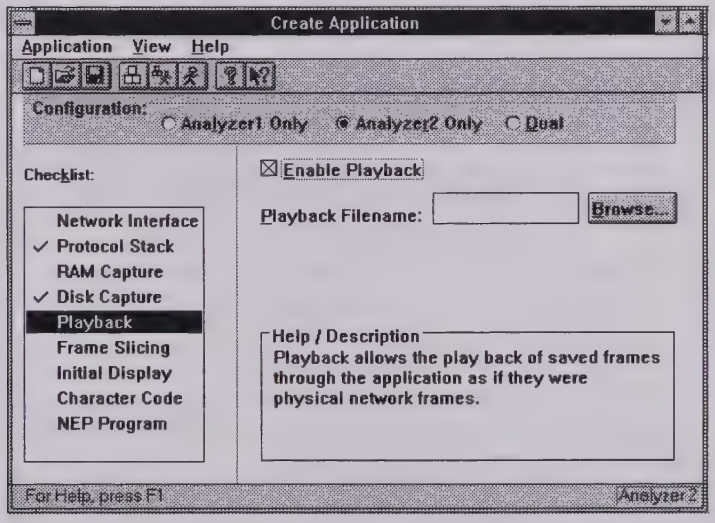


Figure 8-10 Playback Setup

2. Choose the Enable Playback checkbox to enable the playback of the capture file.
3. Choose the Browse button to specify the path and name of the capture file.

   The Open Playback File dialog box (Figure 8-11) appears.

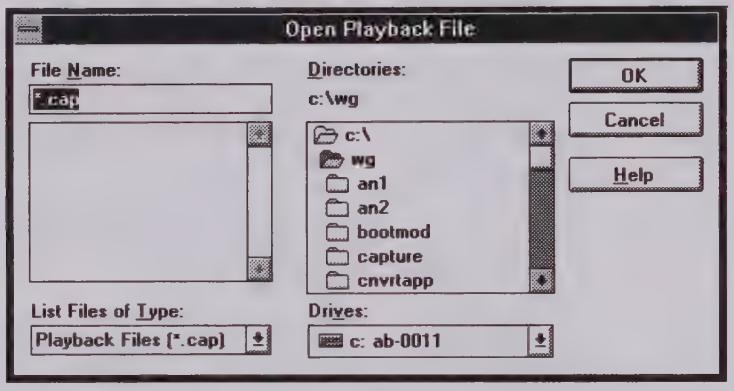


Figure 8-11 Open Playback File Dialog Box

4. Select the capture file that you want to use.

   If the capture file that you want to use is not listed in the Filename box, locate it by doing one or more of the following:

   - in the Drive box, select a different drive
   - in the Directories box, select a different directory
   - in the List Files of Type box, select All Files

5. Choose the OK button.

   You return to the Create Application screen.

Tip:

If you know the path and name of the capture file that you want to use, type this information in the Filename box.

8.9. Setting Up Frame Slicing

Frame slicing allows you to shorten the data frame before it is passed to the analyzer for processing. You might want to adjust the frame in this way if you are interested in the frame header and you have no use for the user data contained within the frame.

Frame slicing starts at the beginning of the frame. For example, if you select the 128-byte frame slicing option, all data beyond 128 bytes is discarded before reaching the analyzer.

To set up frame slicing:

1. Choose Frame Slicing from the Checklist.

   The Frame Slicing Setup (Figure 8-12) appears.

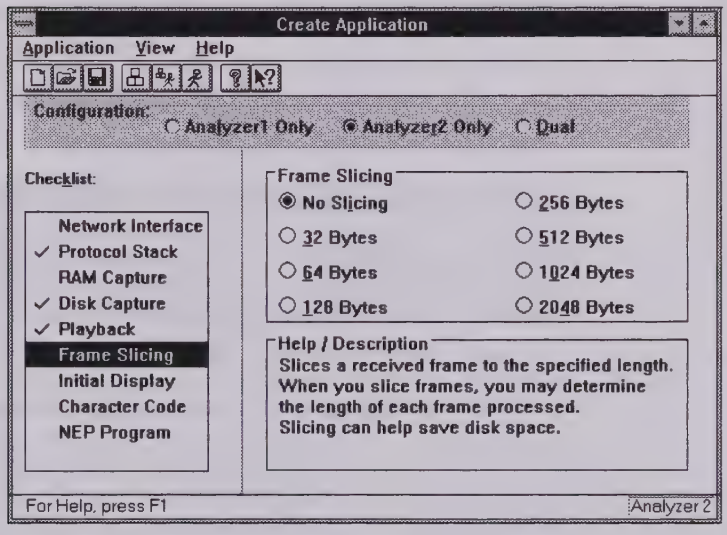


Figure 8-12 Frame Slicing Setup

2. Move the cursor to the Frame Slicing box.
3. Choose one of the frame slicing options:
   - no slicing
   - 32 bytes
   - 64 bytes
   - 128 bytes
   - 256 bytes
   - 512 bytes

- 1024 bytes
- 2048 bytes

Frame slicing is set and a check mark appears next to the Frame Slicing command in the Checklist.

Caution:

If you inadvertently slice a frame in the middle of a protocol, the FCS becomes uncalculated, a frame sliced message appears in the error field on the Protocol Summary window. Anything above the sliced protocol is not displayed.

8.10. Selecting the Initial Display Windows

From the Initial Display Setup, you can select which results windows are displayed automatically when you run the application.

To select the initial display windows:

1. Choose Initial Display from the Checklist.

   The Initial Display Setup (Figure 8-13) appears.

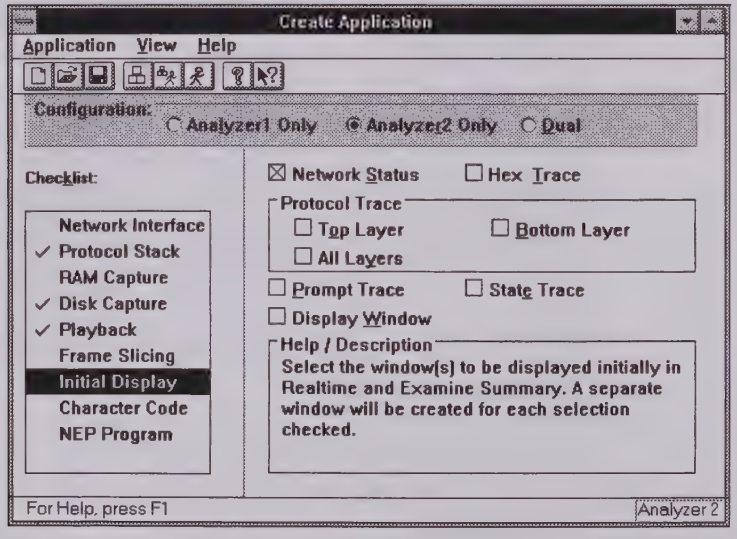


Figure 8-13 Initial Display Setup

2. Choose one or more of the following results windows by choosing the corresponding checkbox:
   - Network Status
   - Hexadecimal Trace

- Protocol Summary - Top Layer, Bottom Layer, or All Layers
- Prompt Trace
- State Trace
- Layer Display

The Network Status window is the default window to be displayed when running the application.

The initial results windows are selected and a check mark appears next to the Initial Display command in the Checklist.

Note:

When you select the Network Status Windows option, the status window that is displayed if you are setting up an Ethernet, Token Ring, or LAN network interface, is the Network Status Window. If you are setting up a WAN network interface, it is the Receive Status Window.

Note:

Monitor's initial displays override any initial display setup that you specify.

8.11. Selecting the Character Code

When you create or modify an application, you can select the data transmission character code. The character code controls the way the DA-3x interprets the data that it captures from or transmits onto the network.

The character code selection affects the display of the Hexadecimal Trace window. The DA-3x also uses the character code to interpret data strings received from or transmitted onto the network.

To select the character code:

1. Choose Character Code from the Checklist.

The Character Code Setup (Figure 8-14) appears.

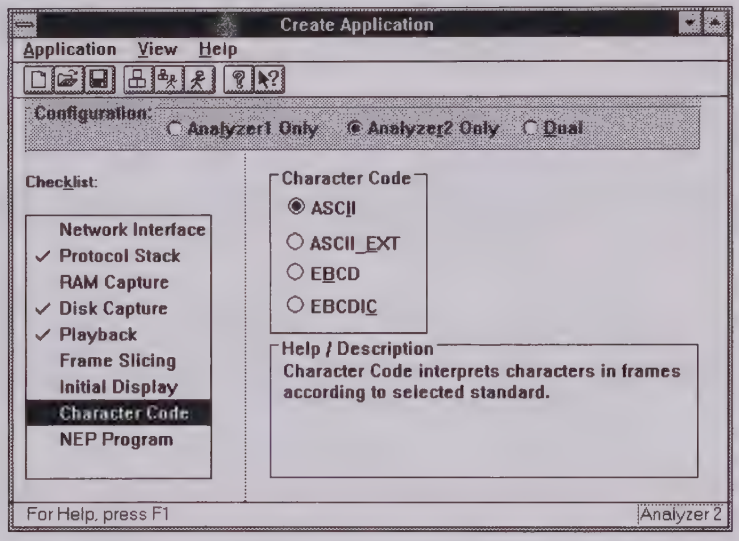


Figure 8-14 Character Code Setup

2. Choose one of the Character Code options:
   - ASCII
   - ASCII_EXT
   - EBCD
   - EBCDIC

   The Character Code is selected and a check mark appears next to the Character Code command in the Checklist.

8.12. Setting Up the Network Event Program

The DA-3x allows you to create a network event program to customize an application. You can create a network event program to perform a wide variety of tasks such as monitoring network traffic for specific network interface conditions or protocol conditions. You can also create a network event program to generate network traffic and simulate specific protocol activities.

For information on programming the DA-3x, refer to the DA-30/31 Programming Reference Set (which can be purchased separately).

8.12.1. Creating a Network Event Program File

To create a NEP file:

1. Choose NEP Program from the Checklist.

   The NEP Program Setup (Figure 8-15) appears.

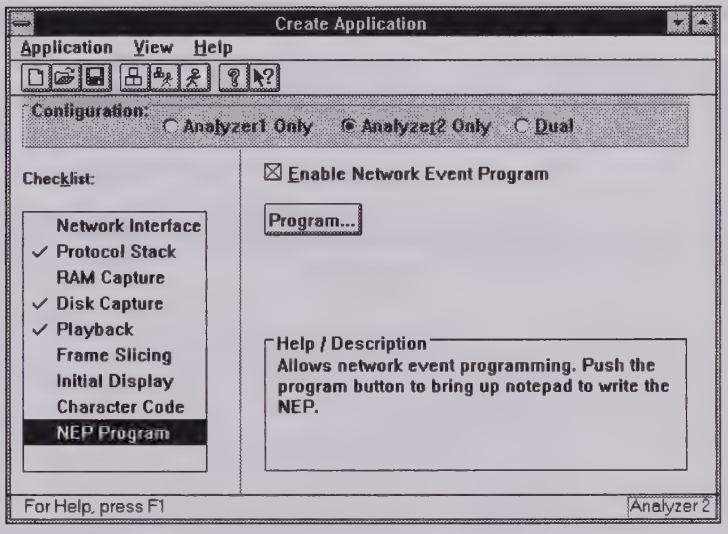


Figure 8-15 NEP Program Setup

2. Choose the Enable Network Event Program checkbox to enable the use of a network event program.
3. Choose the Program button to access the program editor.

The Notepad screen (Figure 8-16) appears.

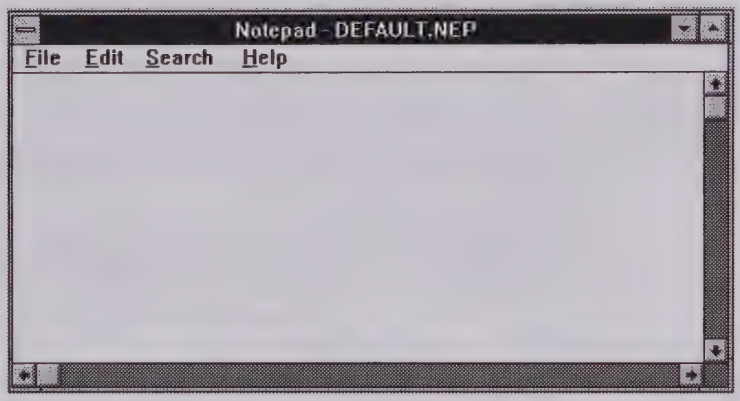


Figure 8-16 Notepad Screen

4. Choose New from the File menu.
5. Create your NEP using the DA-3x's programming language (PAL).

To save the NEP file:

1. Choose Save from the File menu.

   The Save As dialog box (Figure 8-17) appears.

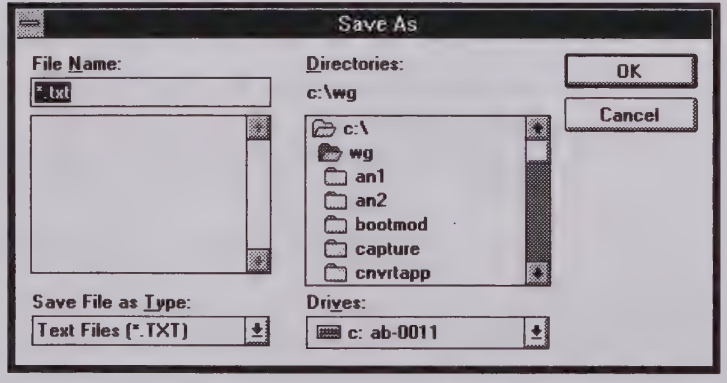


Figure 8-17 Save As Dialog Box

2. Type the name for the NEP file using *default.nep* as the filename in the File Name box.
   - To change the directory where the NEP file will be stored, move the cursor to the Directories box and select a different directory.

- To change the drive where the NEP file will be stored, move the cursor to the Drive box and select a different drive.

3. Choose the OK button.

To exit Notepad and return to the Create Application screen:

♦ Choose Exit from the File menu.

Note:

The Notepad is the default NEP editor. You can use any text editor to create a NEP file as long as you save the NEP as an ASCII file named *default.nep*.

8.12.2. Selecting a Network Event Program File

If you have previously created a network event program, you can use it as part of an application.

To select a NEP file:

1. Choose NEP Program from the Checklist.

   The NEP Program Setup (Figure 8-15) appears.

2. Choose the Enable Network Event Program checkbox to enable the use of a network event program.

3. Choose the Program button to access the program editor.

   The Notepad screen (Figure 8-16) appears.

4. Choose Open from the File menu.

   The Open dialog box (Figure 8-18) appears.

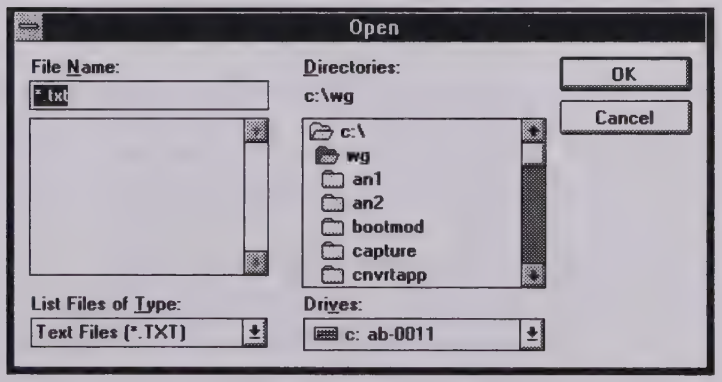


Figure 8-18 Open Dialog Box

5. Select the NEP file that you want to use.

   If the NEP file that you want to use is not listed in the File Name box, locate it by doing one or more of the following:

   - in the Drive box, select a different drive
   - in the Directories box, select a different directory
   - in the List Files of Type box, select Text Files or All Files

6. Choose the OK button.

   You return to the Notepad screen and the selected NEP file is displayed.

7. Choose Exit from the File menu.

   You return to the Create Application screen.

Tip:

If you know the path and name of the NEP file that you want to use, type this information in the Filename box on the Open dialog box.

Note:

The Notepad is the default NEP editor. You can use any text editor to create a NEP file as long as you save the NEP as an ASCII file named *default.nep*.

8.12.3. Editing a Network Event Program File

If you need to make changes to a NEP file that you created as part of an application, you can access the NEP editor (Notepad) and make the necessary changes.

To edit a NEP file:

1. Choose NEP Program from the Checklist.

   The NEP Program Setup (Figure 8-15) appears.

2. Choose the Enable Network Event Program checkbox to toggle the checkbox on and enable the use of a network event program.

3. Choose the Program button to access the program editor.

   The Notepad screen (Figure 8-16) appears along with the contents of the NEP file.

4. Make any desired changes to the NEP file.

5. Choose Save from the File menu to save your changes to the NEP file.

6. Choose Exit from the File menu to exit Notepad and return to the Create Application screen.

Note:

The Notepad is the default NEP editor. You can use any text editor to create or edit a NEP file as long as you save the NEP as an ASCII file named *default.nep*.

8.12.4. Enabling or Disabling the Network Event Program

Once you have specified the name of the NEP file and enabled the NEP program feature, you may find that you need to disable the use of the NEP file. From the NEP Program Setup, you can disable the use of the NEP file without losing the specified NEP file. Then you can enable the NEP file if you want to use it at a later time.

To enable or disable the NEP:

1. Choose NEP Program from the Checklist.

   The NEP Program Setup (Figure 8-15) appears.

2. Choose the Enable Network Event Program checkbox to:
   - toggle the check mark on and enable the NEP
   - toggle the check mark off and disable the NEP

8.13. Creating a Dual-Analyzer Application

If your DA-3x is configured to use two analyzer modules, you can create two different applications (one for each analyzer) and run both of them at the same time.

To create a new dual-analyzer application:

1. Use the New command on the Application menu of the Create Application screen.
2. Select the Dual Analyzer Configuration (Figure 8-19).

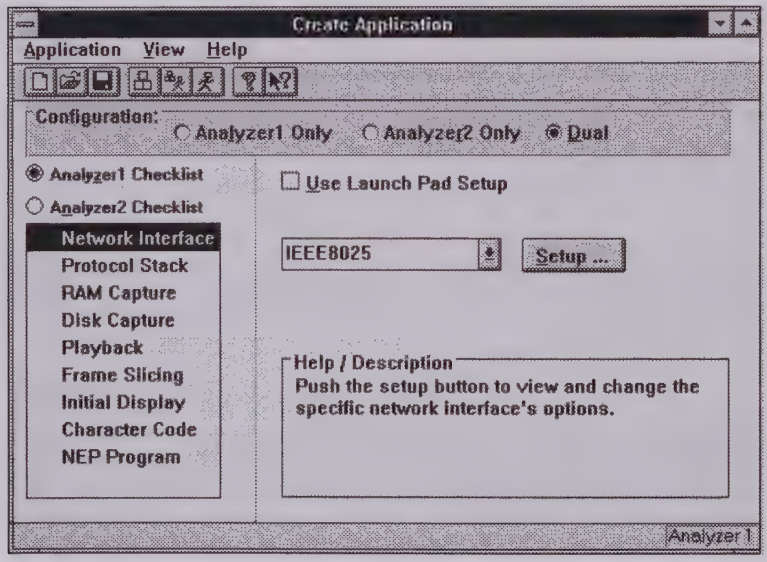


Figure 8-19 Create Application Screen for a Dual Analyzer Application

3. For each analyzer, choose Setup to complete the setup for the desired options. You must select a line interface, but all of the other setup parameters are optional.
4. Save and Run your new application.

8.14. Running a New or Modified Application

After creating a new application or modifying an existing application, you may want to run it. The first time that you run a new or modified application, the DA-3x must either recompile the parts of the application that have changed or compile the entire application.

To run a new or modified application:

1. Choose Run from the Application menu.

   The DA-3x begins compiling the application and displays the Application Compiler dialog box (Figure 8-20).

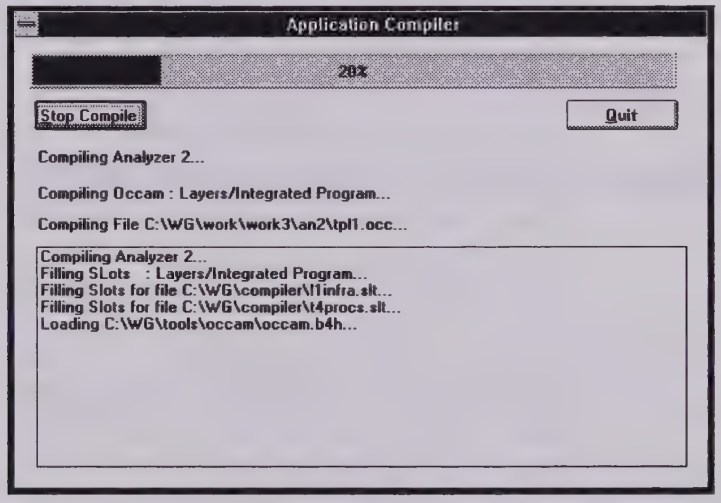


Figure 8-20 Application Compiler Dialog Box

2. If the Prompt at Run option on the Network Interface Setup dialog box is enabled, the DA-3x prompts you to confirm the specified network type.

   Do one of the following:

   - to accept the specified network type, choose the OK button
   - to change the network type, choose the desired option and then choose the OK button

   The DA-3x displays the Real Time screen.

8.14.1. Compiling the Current Application

After creating a new application or modifying an existing application, you may want to compile it. You can use the Compile command on the Application menu to compile the current application without running it. You can also use the Rebuild and Run command on the Application menu to force the DA-3x to recompile the entire application and then run it.

To compile the current application:

- Choose Compile from the Application menu.

The DA-3x compiles the application and displays the Compile Application dialog box (Figure 8-20). After the DA-3x finishes compiling the application, it returns to the Create Application screen and notifies you if it encountered any errors while compiling the application.

Shortcut:

Use the Compile button on the toolbar.

To recompile and run the current application:

- Choose Rebuild and Run from the Application menu.

The DA-3x begins compiling the application and displays the Compile Application dialog box (Figure 8-20). After the DA-3x finishes recompiling, it runs the application.

Shortcut:

Use the Force Compile button on the toolbar.

8.14.2. Clearing the Current Application

You can use the Clear command on the Application menu to clear the current application. This option is useful when you want to clear the DA-3x RAM and create a new application.

To clear the current application:

- Choose Clear from the Application menu and confirm with the OK button.

8.15. Exiting Create Application

You can use the Exit command on the Application menu to exit Create Application and return to the Launch Pad screen.

To exit Create Application:

- From the Application menu, choose Exit.

  If you have not saved the application you are creating or modifying, a dialog box allows you to save at this point.

  You exit Create Application and return to the Launch Pad screen.

8.16. Create Application Menu Reference

The Create Application menu is illustrated in Figure 8-21 and Table 8-1 provides the menu items and their functions.

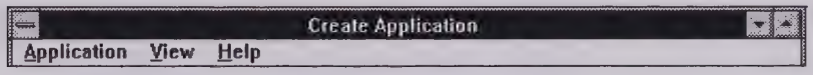


Figure 8-21 Create Application Menu

Menu	Provides options for...
Application	Creating, modifying, saving, compiling, and running applications and exiting Create Application.
View	Displaying or hiding the toolbar and status bar.
Help	Accessing on-line help and displaying version information.

Table 8-1 Create Application Menu Functions

8.16.1. Application Menu

The Application menu includes the commands described in Table 8-2.

Menu Item	Function
New	Create a new application.
Load	Load an existing application.
Save	Save changes to the current application.
Save As...	Save a new application or save a modified application as a new application.
Compile	Compile the Network Event Program (NEP) for the current application.
Rebuild and Run	Recompile the current application and then run it.
Run	Run the current application.
Clear...	Clear the current application.
Description	Displays the application's current description for change or additional information.
Exit	Exit Create Application and return to the Launch Pad screen.

Table 8-2 Application Menu Item Functions

8.16.2. View Menu

The View menu includes the commands described in Table 8-3.

Menu Item	Function
Toolbar	Display or hide the toolbar.
Status Bar	Display or hide the status bar.

Table 8-3 View Menu Item Functions

8.16.3. Help Menu

The Help menu includes the commands described in Table 8-4.

Menu Item	Function
Contents	Displays the content screen for Help.
Using Help	Displays information on accessing on-line help on the DA-3x for Windows.
About Create Application...	Displays version number and copyright information for the Create Application software.

Table 8-4 Help Menu Item Functions

A. Toolbar Reference

This chapter provides information on toolbars that are displayed on the Capture, Monitor, Examine, Create Application, and Real Time screens. The first sheet is a quick reference that you can pull out for convenient use. This is followed by a section that provides more detailed information on each toolbar.

The toolbar is displayed across the top of the screen, below the menu bar, for each of the following main function screens:

- Capture
- Monitor
- Examine
- Create Application
- Real Time

The toolbar gives you quick mouse access to many tools you can use while using the main functions of the DA-3x. Each network interface adds interface-specific buttons to the toolbar.

Tip:

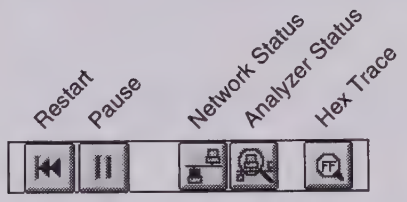
To hide or display the toolbar options, choose View Toolbar from the Control menu to toggle the display on or off.

Toolbar Quick Reference

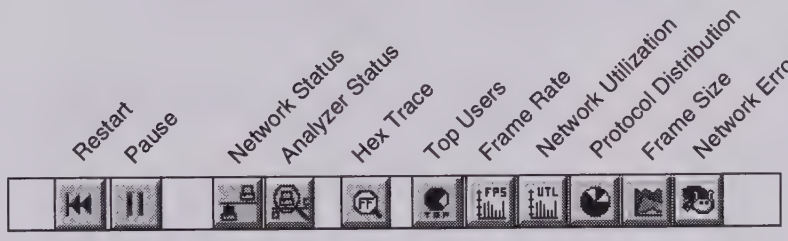
Note:

These sample toolbars are for Ethernet. The actual buttons on the toolbar vary depending on the type of network being monitored.

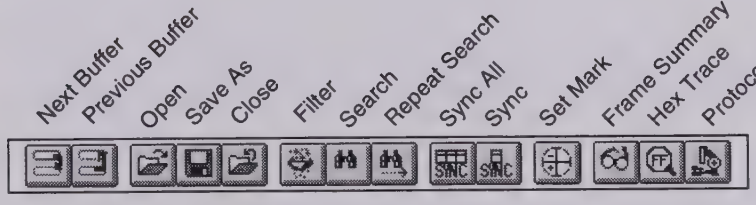
Capture Toolbar



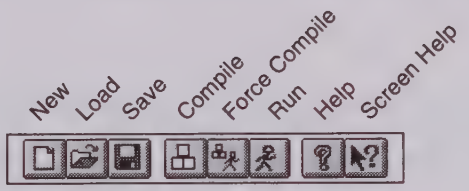
Monitor Toolbar



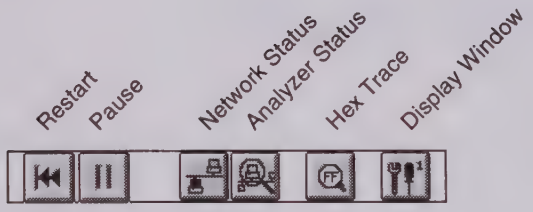
Examine Toolbar



Create Application Toolbar



Real Time Toolbar



For additional toolbar information, refer to the on-line help toolbar topics for the appropriate network interface.

A.1. Capture Toolbar

The Capture Toolbar is displayed across the top of the Capture screen, below the menu bar, to give you quick mouse access to many tools you can use while capturing network traffic. Each network interface adds interface-specific buttons to the Capture Toolbar.

Click		To...
	Restart	Restart the capturing of network traffic.
	Pause	Pause the scrolling of the current results window and view traffic that you are interested in while continuing to capture subsequent network traffic. When you are finished viewing the traffic, choose the Pause button again to resume the display of traffic.
	Network Status	Display the Ethernet Network Status window.
	Analyzer Status	Display the Ethernet Analyzer Status window.
	Hex Trace	Display the Hexadecimal Trace window for the current frame.

Note:

The Capture, Real Time, and Monitor toolbars are sample toolbars using Ethernet. The actual buttons on the toolbar vary depending on the type of network being captured.

A.2. Monitor Toolbar

The Monitor Toolbar is displayed across the top of the Monitor screen, below the menu bar, to give you quick mouse access to many tools you can use while monitoring network traffic. Each network interface adds interface-specific buttons to the Monitor Toolbar.

Click		To...
	Restart	Restart the monitoring of traffic on the network and resets all of the network statistics.
	Pause	Pause the scrolling of the current results window and view traffic that you are interested in while continuing to monitor subsequent network traffic. When you are finished viewing the traffic, choose the Pause button again to resume the display of traffic.
	Network Status	Display the Ethernet Network Status window.
	Analyzer Status	Display the Ethernet Analyzer Status window.
	Frame Rate	Display the Ethernet Rate graph.
	Network Utilization	Display the Ethernet Network Utilization graph.
	Current Top User	Display the percentages of network traffic generated by the top network users for a 30 second sampling period.
	Protocol Distribution	Display the Ethernet Protocol Distribution pie chart.
	Frame Size	Display the Ethernet Frame Size Distribution area graph.
	Network Errors	Displays the Ethernet Network Errors window.

Click		To...
	Hex Trace	Display the Hexadecimal Trace window for the current frame.

A.3. Examine Toolbar

The Examine Toolbar is displayed across the top of the Examine screen, below the menu bar, to give you quick mouse access to many tools you can use while examining frames.

Click		To...
	Next Buffer	Activate the next buffer.
	Previous Buffer	Activate the previous buffer.
	Open	Open a capture file. The DA-3x displays the Open Capture File dialog box in which you can select and open the capture file that you want.
	Save As	Save the contents of the capture buffer to a new file. If the captured traffic has been filtered, you can choose to save only the filtered frames to the new capture file.
	Close	Close the active capture file.
	Filter	Set up criteria for filtering frames and start filtering the captured frames.
	Search	Set up search criteria for finding specific frames and start the searching through the captured frames for frames that match the specified criteria.
	Repeat Search	Perform a search using the previously defined search criteria.

Click		To...
	Sync All	Synchronize or unsynchronize the display of all open results windows for the current capture buffer.
	Sync	Synchronize or unsynchronize the current window with the currently synchronized windows for the current capture buffer.
	Set Mark	Set the relative time mark.
	Frame Summary	Display the Frame Summary window starting at the current frame.
	Hex Trace	Display the Hexadecimal Trace window for the current frame.
	Protocol Detail	Display the Protocol Detail window for the current frame.

A.4. Create Application Toolbar

The Create Application Toolbar is displayed across the top of the Create Application screen, below the menu bar, to give you quick mouse access to many tools you can use while creating or modifying an application.

Click		To...
	New	Creates a new application.
	Load	Displays the Load Application dialog box which allows you to select and load an existing application.
	Save	Displays the Save Application dialog box which allows you to save the current application (for an existing application, choosing this button automatically saves the application).
	Compile	Compiles the current application.
	Force Compile	Performs a forced compile of the current application and then runs the application.
	Run	Runs the current application (if necessary, the DA-3x compiles the application before running it).
	Help	Displays the main contents screen of the online help for Create Application.
	Screen Help	Allows you to select part of the screen, such as the toolbar, and then displays online help about the selected part.

A.5. Real Time Toolbar

The Real Time Toolbar is displayed across the top of the Real Time screen, below the menu bar, to give you quick mouse access to many tools you can use while running an application on the DA-3x. Each network interface adds interface-specific buttons to the Real Time Toolbar.

Click		To...
	Restart	Restart the application.
	Pause	Pause the scrolling of the current results window and view traffic that you are interested in while continuing to monitor subsequent network traffic. When you are finished viewing the traffic, choose the Pause button again to resume the display of traffic.
	Network-Status	Display the Ethernet Network Status window.
	Analyzer-Status	Display the Ethernet Analyzer Status window.
	Hex Trace	Display the Hexadecimal Trace window for the current frame.
	Display Window	Display the Layer Display window for Layer 1, used to display character-based DA-3x applications.

B. Keyboard and Mouse

B.1. Selecting or Choosing Items

For Windows-based software, the terms choose and select have different meanings. Selecting an item means marking it with the selection cursor, which appears as either a highlight, a dotted rectangle, or both. In dialog boxes, you select checkboxes to enable or disable them. Selecting an item does not initiate an action.

To carry out an action, you choose an item. For example, you choose an icon to start an application. You can also choose an item from a menu, or choose a command button in a dialog box. Sometimes you must select an item before you can choose it.

In most instances, you can use mouse or keyboard techniques to select or choose items. Typically, clicking on an item with the mouse selects it, while double-clicking on an item with the mouse invokes an action. To select an item with the keyboard, use the cursor keys to select the item and then press Enter to choose it.

B.2. DA-3x Keyboard

The DA-3x uses its own detachable keyboard or a plug-in enhanced AT-compatible keyboard. The DA-3x supports a special set of function keys in addition to most standard alphanumeric keys. These special keys are shaded in the keyboard illustration in Figure B-1.

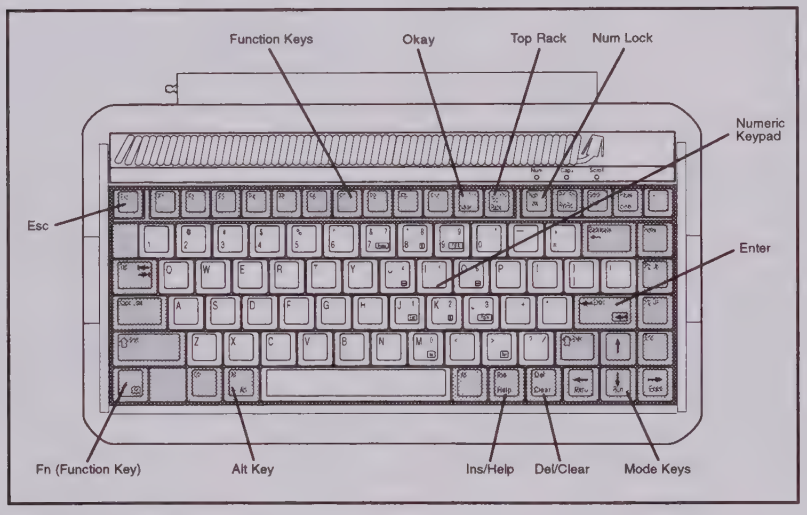


Figure B-1 DA-3x Keyboard

The function keys provide the special actions listed in Table B-1.

Key	Function
Ctrl+Alt+Del	Reboots the DA-3x.
Fn	Activates the functions enclosed in boxes on the numeric keypad keys, such as Ins, PgDn, and Home.
Fn (or Num Lock)	Activates the plus and minus keys on the numeric keypad (located right of center on the keyboard).
Num Lock(or Shift+Fn)	Activates the numeric keypad in DOS.
Fn+Enter	Activates the Enter key when Num Lock is on.

Table B-1 DA-3x Special Function Keys

B.3. DA-30C Keyboard

The DA-30C uses its own detachable keyboard or a plug-in enhanced AT-compatible keyboard. Just like the DA-30 and DA-31, the DA-30C supports a special set of function and softkeys in addition to most standard alphanumeric keys (see Table B-1). These special keys are shaded in the keyboard illustration in Figure B-2.

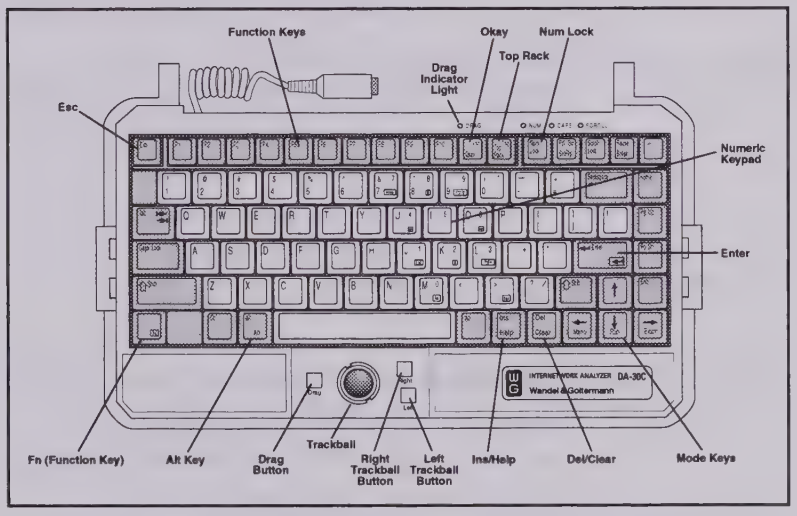


Figure B-2 DA-30C Keyboard with Built-in Trackball

The only difference between the DA-30C keyboard and the DA-30 keyboard is the addition of a built-in trackball with three trackball buttons.

Figure B-2DA-30C Keyboard with Built-in Joystick

The only difference between the DA-30C keyboard and the DA-30 keyboard is the addition of a built-in joystick with two joystick buttons.

8.3.1. DA-30C's Built-in Joystick

Series AB and later DA-30C color mainframes have a built-in joystick on the keyboard that provides the same functionality as a mouse, but enhances portability. The control stick looks and feels similar to a pencil eraser. The buttons on either side of the stick function the same as a two-button mouse and can be single or double clicked.

Locate CursorAssigns the Locate Cursor function to a Secondary Click, Long Secondary Click, Primary-Secondary (simultaneous) Click, or Secondary Double Click.

Snap toAutomatically moves the cursor to the default button of any pop-up dialog box.

Table B-5VersaPoint Short Cuts Options

Table B-6 provides the VersaPoint Short Cuts buttons and their actions.

ButtonAction

OKAccepts changes to the Short Cuts dialog box and returns to the VersaPoint Control Panel.

CancelCancels changes to the Short Cuts dialog box and returns to the Versa-Point Control Panel.

ResetReturns the Short Cuts settings to their default values.

HelpAccesses VersaPoint on-line help for the joystick.

Table B-6VersaPoint Short Cuts Command Buttons

B.3.2.DA-30C's Built-in Trackball

Louise: Change the following bolded sentence.

DA-30C color mainframes prior to Series AB include a built-in trackball. It provides the same functionality as a mouse or joystick. The location of the built-in trackball and the trackball buttons on the keyboard are shown in Figure B-6.

Tips:

Louise: the new trackball figure (minus callouts) goes here.

Figure B-6DA-30C Keyboard with Built-in Trackball

B.4. DA-30C's Built-in Trackball

The DA-30C keyboard includes a built-in trackball. It provides the same functionality as a mouse, but having a built-in trackball maintains the DA-30C's portability. The location of the built-in trackball and the trackball buttons on the keyboard are shown in Figure B-2.

Tips:

The following tips should make using the trackball a little easier.

- Position your fingers over the home-row keys on the alphanumeric section of the keyboard and use your thumb to move the trackball (as shown in Figure B-3).
- Use the index finger on your other hand to press the trackball buttons.
- To drag an item on the screen, press the Drag button. Use the trackball to move the item to the desired location. Then press the Drag button again to release the item.

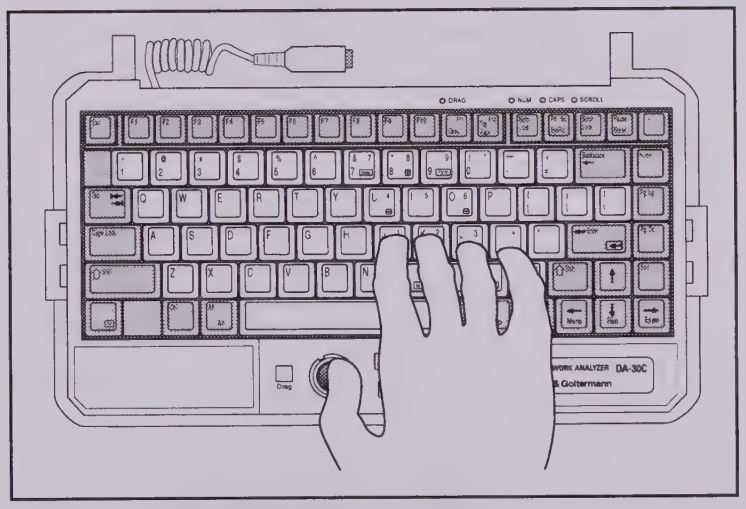


Figure B-3 Trackball Finger Position

B.5. DA-30C's Built-in Joystick

Series AC and later DA-30C color mainframes have a built-in joystick on the keyboard that provides the same functionality as a mouse, but enhances portability. The control stick looks and feels similar to a pencil eraser. The buttons on either side of the stick function the same as a two-button mouse and can be single or double clicked.

To quickly adapt to the joystick:

1. At first, you may want to slow down the mouse speed and activate the mouse trail (change the VersaPoint Mouse settings by using the information in the VersaPoint Control Panel Section).
2. Place your index finger on the top of the control stick to move the cursor (Figure 1).
3. Use the index finger on your other hand to press the joystick buttons.

To control speed and direction:

- Apply pressure to the control stick in the desired direction.
- To speed or slow the stick movement, apply increasing or decreasing pres-

sure.

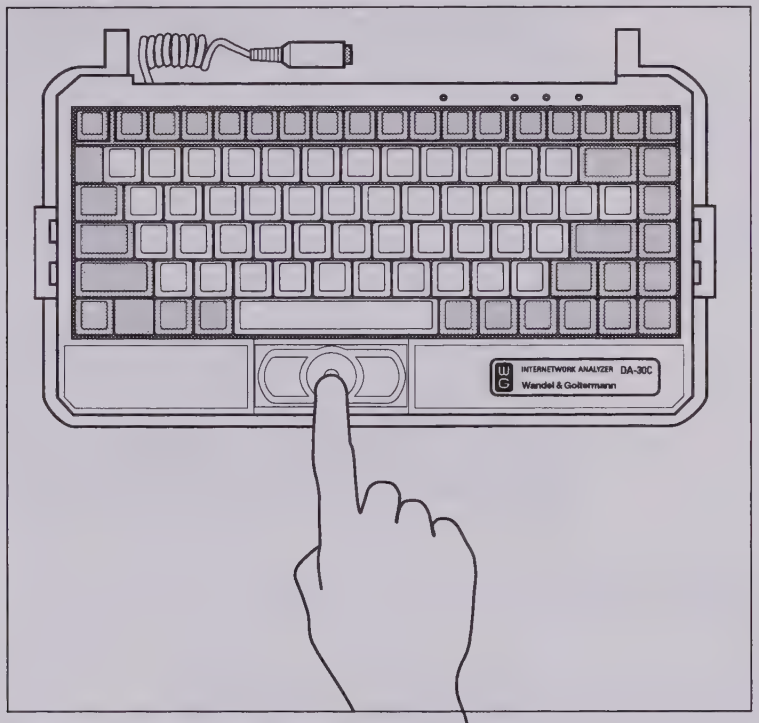


Figure B-4 Joystick Finger Position

B.6. Adjusting the Joystick Controls

VersaPoint Control Panel

From the VersaPoint Control Panel (Figure 2) you can change the speed and size of the cursor, swap the button functions, and activate the mouse trails.

To access the VersaPoint Control Panel:

1. Use Alt-Tab or minimize Program Manager to access the VersaPoint icon.
2. Double click on the VersaPoint icon.

3. The VersaPoint Control Panel (Figure B-5) appears.

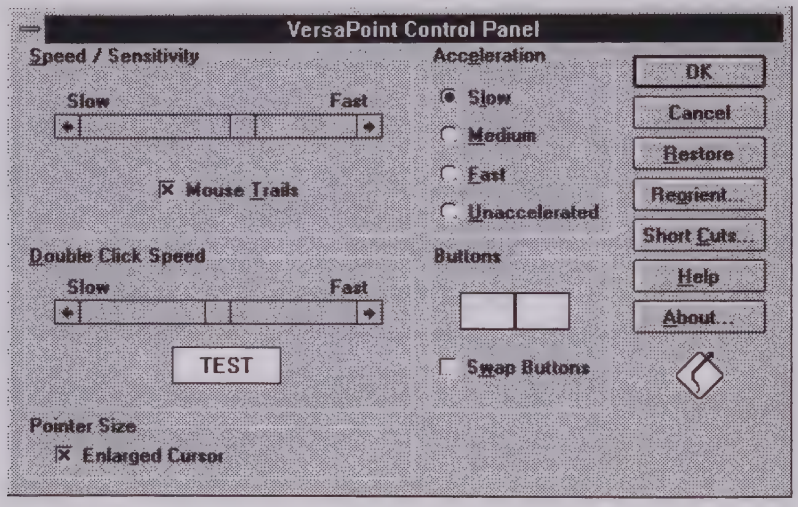


Figure B-5 VersaPoint Control Panel

Table B-2 provides the VersaPoint Control Panel options and their descriptions.

Option	Description
Speed/ Sensitivity	Adjusts how fast the cursor moves from one location to another and how responsive it is to the touch. Also allows you to enable mouse trails to enhance the visibility of the cursor movement.
Acceleration	Adjusts the speed with which the cursor moves from a full stop to movement. The choices are Slow to Fast and Unaccelerated.
Double Click Speed	Adjusts the button's double click speed from Slow to Fast and provides a test area to check the speed.
Buttons	Swaps
Pointer Size	Enlarges the cursor from the regular white cursor to a large black cursor.

Table B-2 VersaPoint Control Panel Options

Table B-3 provides the VersaPoint Control Panel buttons and their actions.

Button	Action
OK	Accepts any changes to the VersaPoint Control Panel and returns to the Windows Control Panel.
Cancel	Cancels any changes to the VersaPoint Control Panel and returns to the Windows Control Panel.
Restore	Returns all the VersaPoint Control Panel settings to their default values.
Reorient	Changes the orientation of the cursor, for example, you can adjust the cursor to move down when you push up on the joystick.
Short Cuts	Displays the VersaPoint Short Cuts window.
Help	Accesses VersaPoint on-line help for the joystick.
About	Displays VersaPoint version information.

Table B-3 VersaPoint Control Panel Command Buttons

B.7. VersaPoint Short Cuts

You can use the VersaPoint Short Cuts window (Figure 3) to assign short cuts to the joystick buttons for drag lock, double click, locate cursor, and snap-to. The following table describes Short Cut terms.

Drag Lock	To lock an object with the cursor so that you can drag it to a different location.
Primary Button or Click	The left button (default) of a mouse.
Secondary Button or Click	The right button (default) of a mouse.
Primary-Secondary	The left and right mouse buttons pressed simultaneously.
Locate Cursor	Moves the cursor from off the screen to the center of the screen.

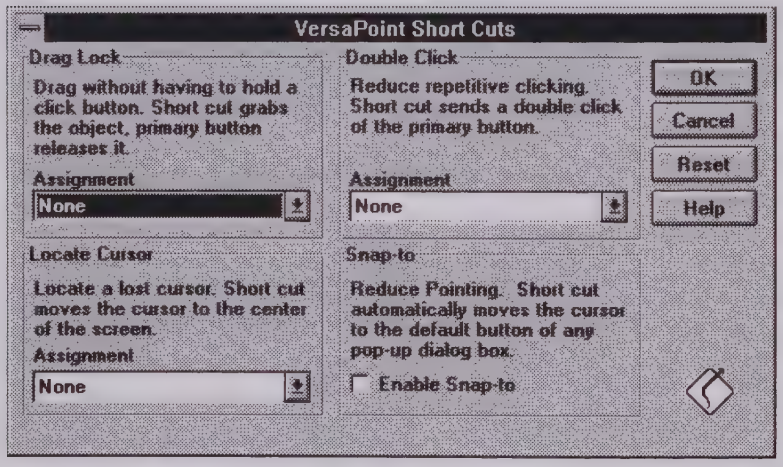

VersaPoint Short Cuts
Drag Lock
Drag without having to hold a click button. Short cut grabs the object, primary button releases it.
Assignment
None
Double Click
Reduce repetitive clicking. Short cut sends a double click of the primary button.
Assignment
None
OK
Cancel
Reset
Help
Locate Cursor
Locate a lost cursor. Short cut moves the cursor to the center of the screen.
Assignment
None
Snap-to
Reduce Pointing. Short cut automatically moves the cursor to the default button of any pop-up dialog box.
Enable Snap-to

Figure B-6 VersaPoint Short Cuts Dialog Box

Table B-4 provides the VersaPoint Short Cuts options and their descriptions.

Option	Description
Drag Lock	You can assign the Drag Lock option to a Secondary Click, Long Secondary Click, Primary-Secondary (simultaneous) Click, or Secondary Double Click. The primary button releases the object.
Double Click	Assigns a Double Click to a Secondary Click or a Long Secondary Click.
Locate Cursor	Assigns the Locate Cursor function to a Secondary Click, Long Secondary Click, Primary-Secondary (simultaneous) Click, or Secondary Double Click.
Snap to	Automatically moves the cursor to the default button of any pop-up dialog box.

Table B-4 VersaPoint Short Cuts Options

Table B-5 provides the VersaPoint Short Cuts buttons and their actions.

Button	Action
OK	Accepts changes to the Short Cuts dialog box and returns to the VersaPoint Control Panel.
Cancel	Cancels changes to the Short Cuts dialog box and returns to the VersaPoint Control Panel.
Reset	Returns the Short Cuts settings to their default values.
Help	Accesses VersaPoint on-line help for the joystick.

Table B-5 VersaPoint Short Cuts Command Buttons

B.8. Keyboard Shortcuts

Table B-6 lists the functions available for manipulating windows and keyboard shortcuts for performing these functions.

To...	Press...
Cycle through the application windows	Alt+Tab
Access the application Control menu for resizing and rearranging application windows	Alt+Spacebar
Access the window Control menu for resizing and rearranging results windows	Alt+–
Access the Task List to switch between the currently running applications	Ctrl+Esc
Display a menu	Alt+underscored letter in menu name
Choose a command from a displayed menu	Alt+underscored letter in command name
Display context-sensitive on-line help	F1

Table B-6 Keyboard Shortcuts

B.9. Basic Mouse Techniques

Table B-7 describes the four basic mouse techniques.

Technique	Description
Point	Move the mouse pointer until the tip rests on a specific object or area on the screen.
Click	Press and release a mouse button (usually the left mouse button).
Double-click	Press and release a mouse button twice in rapid succession (usually the left mouse button).
Drag	Press a mouse button and hold it down while moving the mouse pointer (usually the left mouse button).

Table B-7 Basic Mouse Techniques

C. Automating DA-3x Windows Tasks

C.1. Using Macros to Automate DA-3x for Windows Tasks

The Windows Recorder allows you to record a sequence of keystrokes and mouse actions to play back at a later time. This sequence of keystrokes and mouse actions is called a macro. Macros are helpful for automating the steps of a task that you perform often.

For the DA-3x for Windows, you may find it helpful to create macros for the following tasks:

- selecting the default network interface on the Launch Pad
- setting up a selected network interface
- assigning applications to the assignable buttons on the Launch Pad
- displaying a specific combination of results windows on the Examine screen
- expanding the amount of data displayed in a results window by hiding the toolbars and status bar and maximizing the window

C.2. Recording a Macro

Automating a simple, straight-forward task is fairly easy to do using the Recorder.

To record a simple macro:

1. Move to the point in the DA-3x for Windows software where you want to start recording the steps of a task. When you play back the macro, you must start from this same point.
2. Switch to Program Manager and choose the Recorder icon in the Accessories program group.
3. From the Macro menu, choose Record.
4. Specify the name and shortcut key combination that you want to assign to the macro.
5. To begin recording the macro, choose the Start button.
6. Type the keystrokes and perform the mouse actions that you want to record. Perform the task as you would normally do it.
7. To stop recording, choose the Recorder icon. If the Recorder icon is not visible on the screen, switch to it by pressing Alt+Tab or Alt+Esc.
8. Choose the Save Macro option and choose the OK button.

9. Switch to the Recorder and save the macro to a Recorder file.

Note:

For more information on automating tasks using the Recorder, refer to the DA-3x for Windows on-line help or the Microsoft Windows Operating Guide.

C.3. Playing Back a Macro

After you record a macro, you can play it back at any time to automate the corresponding task. However, make sure that you start the macro at the appropriate place. For example, to play back a macro that you recorded from the Examine screen with a capture file open, you must choose Examine from the Launch Pad and then open a capture file.

To play back a macro using a shortcut key combination:

1. Start the Recorder and open the Recorder file that contains the macro that you want to play back.
2. Switch to the DA-3x screen where you want to start playing back the macro.
3. Press the shortcut key combination to play back the macro.

To play back a macro using the Run command:

1. Move to the DA-3x screen where you want to start playing back the macro.
2. Start the Recorder and open the Recorder file that contains the macro that you want to play back.
3. Select the macro that you want to play back.
4. To play back the macro, do one of the following:
   - From the Macro menu, choose Run.
   - Using the mouse, double-click on the macro name in the list of macros.

Note:

To stop a macro while it is playing back, press Ctrl+Break. Then choose the OK button to confirm the cancellation of the macro.

C.4. Guidelines for Creating Macros

For the best results, follow these basic guidelines when you create macros:

- Plan and prepare before you start recording a macro.
- Close other unrelated applications.
- Use keystrokes whenever possible instead of using the mouse.
- Avoid the use of checkboxes in macros.

Glossary

absolute time	The time that the DA-3x received the current frame.
analyzer module	The protocol analysis processor that analyzes high frame rate data streams at network speeds. It executes multiple parallel processes, one for each layer of the OSI-model and one for central control and interaction with the other processors.
application	Software provided by W&G that allows the user to monitor, analyze, generate, or filter network traffic, or test network hardware.
application groups	A group of related DA-3x applications stored under an appropriate group name such as Ethernet, Token Ring, and V.35.
application manager	The DA-3x feature that manages the applications stored on the DA-3x. It provides options for installing, loading, running, copying, and moving applications.
assignable buttons	Buttons at the bottom of the Launch Pad screen to which you can assign frequently used applications for quick access.
attribute	One of these seven distinguishing frame characteristics: enhanced, marked, sliced, overflow, no FCS, bad FCS, or aborted.
autodecode	The DA-3x feature that decodes any protocol in captured data, provided that the protocol software is loaded on the DA-3x's hard disk.
automatic protocol recognition	A feature of the DA-3x that enables it to recognize protocols for which no layer protocol package is loaded. The DA-3x identifies the protocol from the protocol iden tifier bytes in the frame header.
Broadband Analyzer Module (BAM)	See analyzer module.
buffer	See capture buffer.
capture	The DA-3x feature that temporarily stores network traffic in a buffer.
capture buffer	A part of the available DA-3x RAM set aside for the temporary storage of frames as they are received from the network.

capture file	A unique file used to store the frames from the capture buffer. It can be loaded into the DA-3x RAM for examination at a later time.
character-based DA-3x	The original DA-3x which has character-based software and runs under DOS rather than Microsoft Windows. With character-based DA-3x software and DA-3x for Windows software both installed on your DA-3x, you can choose to run either one when you start up or reboot the DA-3x.
character code	The DA-3x feature that allows the selection of the data transmission character code such as hex or ASCII. This controls the way the DA-3x interprets the data it captures from and transmits to the network.
choosing	Using a mouse or the keyboard to pick a command to perform a task or an icon to start an application.
command buttons	Buttons located on a dialog box (usually along the bottom or on the right side) that initiate an immediate action, such as carrying out a command or canceling a command.
compile	To translate an application's source code into a computer-executable form.
control menu	A box in the upper left-hand corner of each screen or window which allows you to move, close, or change the size of the screen or window.
create application	The DA-3x feature that creates new applications and modifies existing applications.
CSV	Comma-separated value. A file format accepted by many software packages, such as spreadsheet IS. The Export to CSV command on the Examine screen allows you to export the contents of the current capture buffer to a CSV file.
custom stack	A feature available on the Protocol Stack Setup that allows you to load a protocol at any layer of the protocol stack.
DA-3x	DA-30, DA-31, or DA-30C.
default network interface	The network interface selected in the Installed Interface section of the Launch Pad. It is used when running Capture, Monitor, or applications.
delta time	The number of seconds that have elapsed between the mark that you have set using the Set Mark command and when the DA-3x received the current frame.

dialog box	A temporary window that requests information and provides options for carrying out a selected command.
display window	Displays information collected from an application based on network activity recognized at the specified layer in the NEP. The Layer 1 Display window is typically used to display character-based DA-3x applications.
dual analysis	The capability of a DA-30 equipped with two analyzer modules to run two different applications at the same time.
examine	The DA-3x feature that provides detailed analysis of real time or captured data including viewing details, summaries, and interpretive statistical information.
export	To save captured data in a format that can be used with other software, such as a spreadsheet. From the Examine screen, you can export captured data to a comma-separated value (CSV) file.
filtering	A DA-3x function that allows you to display only those capture buffer frames that match specific criteria.
frame slicing	An option that allows you to shorten the data frame before it is passed to the analyzer for processing.
hexadecimal trace	A results window that displays the contents of each frame in hexadecimal format and character code format.
initial display	The results windows which display automatically when you run an application.
LAN	Local area network. A communications network that services devices over a small physical distance.
Launch Pad	The initial screen that provides access to all of the features of the DA-3x for Windows software.
LED indicators	Displays on the DA-3x front panel that give the status of the network connected to interface slots 4 and 5 (top LEDs) and slots 6 and 7 (bottom LEDs - DA-30 andDA-30C only).
LED overlays	A covering for the DA-3x front panel LEDs that identifies the interface-specific designation for each LED.
menu	The area located below the title bar, along the top of the screen, that lists the available commands for the current screen.

merging	Combining two existing applications together to create a new dual-analyzer application. You can combine two single-analyzer applications, different analyzer portions of two dual-analyzer applications, or one single-analyzer application and one analyzer portion of a dual-analyzer application.
monitor	The DA-3x feature that provides a real time view of network data, including graphs, pie charts, and interpretative statistical information.
NEP	See network event program.
network event program	A software program you can create to customize an application to perform tasks such as monitoring specific network interface conditions and protocol conditions or generating network traffic.
network interface module	A network module installed in one or more of slots 4 through 7 that connects the DA-3x to the network under test, such as Ethernet or V.35.
network interface setup	A network-interface-specific dialog box which enables you to set up the parameters for the network interface in use.
network interface software	Software that works with the network interface module to allow the DA-3x to correctly interact with the type of network being monitored.
nodename	A user-defined name which is equated with the IEEE-specific address of a network interface card. Nodenames, which can be up to 17 characters long, must begin with a letter but may contain numbers or decimals. Although nodenames cannot contain spaces, periods may be used to separate words such as last name and first name (such as Smith.John).
nodename file	A file that you can create to associate logical names with the IEEE-specified network interface card addresses.
notepad	The default NEP editor with which you can create a NEP.
playback	A DA-3x feature that allows you to use a capture file as the source of network traffic for an application rather than the live network.
power-up application a	An application that the DA-3x immediately loads and executes on power-up. You can specify whether or not power-up application is used.
prompt trace window	A results window based on prompts originating from

	NEP activity. This can be used to debug a NEP.
Protocol Analyzer Module (PAM-U)	See analyzer module.
protocol software	DA-3x software used to decode the protocols used by the devices in the network being monitored. All devices on the same network use a minimum of one shared protocol.
protocol stack	The DA-3x feature that provides an OSI Model for layer-by-layer loading of protocols at default or custom layers.
protocol summary window	A results window which corresponds to the protocols detected in the network traffic. These protocol traces display the fields of the header of the protocol that is of interest.
RAM capture	The DA-3x action that buffers network traffic in a RAM file while continuing to capture network traffic in real time.
real time	The part of the DA-3x for Windows software which monitors network traffic and interfaces with the analyzer modules and network interface modules. Capture, Monitor, and applications run over the Real Time software and add their own unique features to those available from Real Time.
relative time	The interframe delay or number of seconds elapsed between the time that the DA-3x received the previous frame and the current frame.
resizing	Enlarging a results window to display more information or reducing the size to allow more room for another window.
results windows	Windows that display information about the frames in the capture buffer, such as summary information, statistics and graphs.
Ring Map	A results window that displays a listing of the MAC addresses for all of the active nodes on the ring in ring map order.
selecting	Marking an item on the screen with the selection cursor, so that it appears as either a highlight, a dotted rectangle, or both. For example, in dialog boxes you select checkboxes to enable or disable them.
slot	One of the seven open areas in the back of the DA-3x where network interface modules are installed to connect the DA-3x to the network under test, such as Ethernet or V.35.

state trace window A results window that allows you to track the operation of the states that are defined within a DA-3x NEP.

status bar The area at the bottom of the screen that provides information about the current screen or window, such as a description of the current menu option.

stop condition The condition for disk or RAM capturing that controls how the DA-3x responds when it reaches the specified maximum capture buffer or file size. The DA-3x can either stop capturing network traffic to the capture buffer/file or it can overwrite the existing capture buffer/file.

summary windows Frame Summary or Protocol Summary windows. The Frame Summary window displays summary information about each frame in the current capture buffer. The Protocol Summary window displays protocol-specific information for each frame in the capture buffer.

timestamping Time assigned to each frame by the DA-3x and expressed in either absolute time, relative time, or delta time.

title bar The area located along the top of a screen or window that contains the name of the screen or window.

toolbar The graphic area across the top of the screen, below the menu bar, whose buttons give quick mouse access to a screen's most commonly used functions.

WAN Wide area network. A communications network that services devices over a large physical distance.

WAN feature module The module which allows the DA-3x to use the various WAN interface modules with the protocol analyzer modules.

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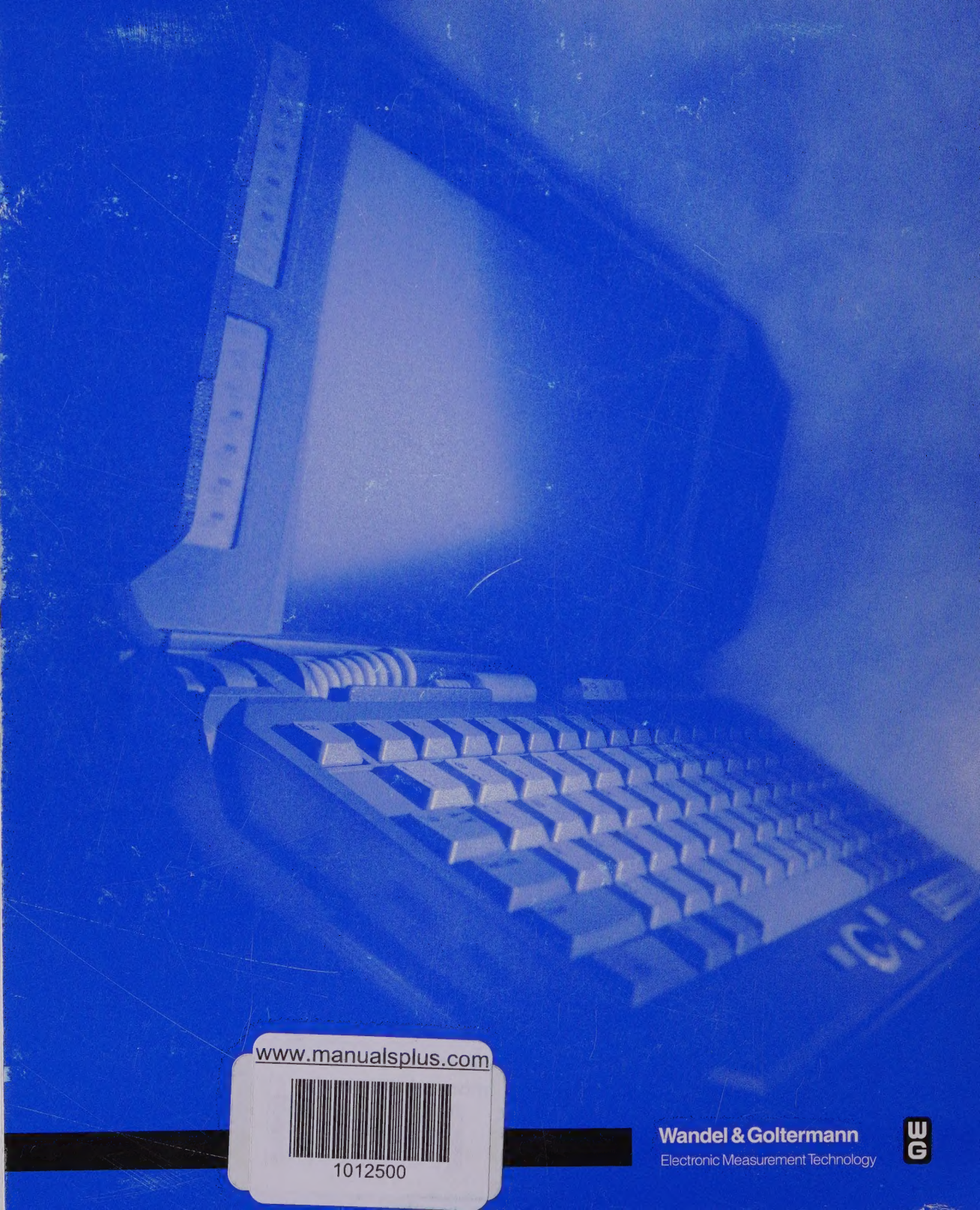

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